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[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

1. Their Royal Highnesses Prince Edward and Prince Albert of Wales visited the Museum on the afternoon of 19th April.

Her Royal Highness Princess Henry of Battenberg, together with Prince Leopold and Prince Maurice of Battenberg, visited the Museum on the afternoon of 5th May, and expressed great satisfaction with the Nelson Exhibition.

2. The following officers became members of the Institution during April:—

Sub-Lieutenant C. E. V. Craufurd, R.N.
Captain C. Wigram, M.V.O., Indian Army.
Major W. R. W. James, R.G.A.
Captain P. H. Stevenson, late 3rd Bn. West Yorkshire Regiment.
Lieutenant H. A. Waring, Royal West Kent Regiment.
Major W. P. Hussey-Walsh, Leicestershire Regiment.
Lieutenant R. P. A. De Moleyns, Rifle Brigade.
Lieut.-Colonel H. A. Iggulden, Notts and Derbyshire Regiment.
Colonel H. O'B. Owen, late R.F.A.
Captain H. L. M. Tritton, Essex Imperial Yeomanry.
Lieutenant H. E. P. Thomas, East Yorkshire Regiment.
Second-Lieutenant E. Hill, Essex Imperial Yeomanry.
Captain R. C. Temple, R.M.A.
Lieutenant B. M. Fuller, Dorsetshire Regiment.
Lieutenant H. J. Gillespie, R.F.A.
Second-Lieutenant A. T. Shakespear, R.E.
Lieutenant J. D. Grant, V.C., Indian Army.
Lieutenant H. H. S. Vaughan, R.F.A.

(No officers of the Militia, Royal Naval Reserve, or Volunteer Force joined the Institution during the month.)

3. Field-Marshal the Viscount Wolseley, K.P., etc., has been appointed a Vice-President, vice Admiral Sir Erasmus Ommanney, K.C.B., deceased.

Field-Marshal the Right Hon. the Earl Roberts, V.C., K.G., etc., has been appointed a Vice-President, vice General the Lord Chelmsford, G.C.B., G.C.V.O., deceased.

The establishment of Vice-Presidents is now complete.

4. The Nelson Exhibition was opened on Monday, 1st May, and has so far proved a great success. It is hoped that members will do all in their power to bring it to the notice of the public.

The complete illustrated catalogue of the Exhibition is now in print, and will be forwarded, post free, on receipt of a remittance of one shilling.

5. RECEPTION.—Owing to the visit of His Majesty the King of Spain, His Royal Highness the President of the Institution has found it necessary to alter the date of the Reception from 8th June to Thursday, 29th June. The Council will issue a notice giving full details and particulars to all members in the United Kingdom in due course.

SECOND PRIZE ESSAY.

Subject:—

"THE BEST METHOD FOR CARRYING OUT THE CONJOINT PRACTICE OF THE NAVY AND ARMY IN EMBARKATION AND DISEMBARKATION FOR WAR, ILLUSTRATED BY THE EXPERIENCE OF THE PAST."

By Major G. F. MacMUNN, D.S.O., p.s.c., R.F.A.

"*Delenda est Carthago.*"

TO discuss the above subject systematically and in detail, and to know the particulars in which training and conjoint practice are necessary, it is essential to have a general idea of the whole question of over-sea expeditions and the principles that govern them. If these be understood, the points in which training and practice are necessary to success will stand out of themselves.

It is proposed therefore to examine the whole question in outline, and enter into detail in such matters as seem to require careful preparation. With this object, the matter will be treated as follows:—

INTRODUCTORY REMARKS.

PART I.

Over-sea Expeditions:—

1. Their nature.
2. The sequence of events.

PART II.

1. Embarkations.
2. Disembarkations.
3. Orders for disembarkations.
4. Operations on landing.
5. Re-embarkations.
6. Coast reconnaissance.

PART III.

The training and conjoint practice.

APPENDIX I.—Boats available for a landing.

APPENDIX II.—Schemes for landing exercises.

INTRODUCTORY REMARKS.

It should be remembered that in most military operations, using the word in its original meaning of combatant action by land and by sea, the success depends as much on the brain that prompts the movements as on the limbs that execute, and that in most preparations the need is for good staff work. It will be seen that in embarkation and landings the burden falls on the joint staff.

As a preliminary to eliciting the various points in which practice and training are desirable and possible, it is first of all necessary to understand what it is likely that the Navy and Army are likely or liable to be called on to perform in the matter of embarkations and disembarkations for war.

The writings of Captain Mahan and those who have followed in his footsteps have made the elementary principles of sea power, especially as applied to the British Empire, comparatively familiar to English folk.

Sea Power.—It has been definitely shown in the past that a sea Power without land forces cannot prevail against a land Power that does not rely on sea-borne supplies and commerce. In England loss of command of the sea for a few weeks must bring the starving and the unemployed surging to the steps of Parliament, insistent on peace at any price. England, the island Power, the vaunted mistress of the seas, is not self-supporting; but the Continental nations, even when not themselves producing their own food essentials, can be supplied from across their land frontiers. Loss of command at sea does not bring their millions wailing for food.

Spanish Ulcer.—It was not our strength in Navies alone that humbled the conqueror of Europe, and brought Napoleon to Elba; but it was rather the "Spanish Ulcer," the small red spot daily fed by the sea and growing redder—the real sea power, that combination of sea and land resources that enables the possessor to place troops in a position where their actual presence enhances their effect out of all proportion to their actual numbers. Fleets of war-ships may sweep the sea, but they cannot carry war to the heart of a land Power—true sea power is the capacity for joint action.

Crimea.—It was not the size of the Allied Expedition to the Crimea that brought Russia to her knees and a humiliating surrender; it was the point at which the irritant was applied and the distance between Great Russia and the Chersonese, unspanned by railways and badly served by roads, that cut off from the seat of war the vast Armies of the Tsar, and compelled them to march over countless miles of snow-swept and sun-dried steppes, till they lost nine-tenths of their number on the road.

Sea power to us, then, means an amphibious power: the strength at sea to sweep it clear, and the land forces to transport and apply at points where their strategical effect will be immense, added to the bottoms wherein to carry that force.

The naval power of Carthage time after time crushed the Romans at sea; but since she had not the land forces available to carry war home to the heart of Rome, the day at last came when the land Power became supreme at sea, and the fiat went forth: "Delenda est Carthago."

The examples in the past, notably those of Wellington in the Iberian Peninsula, and the Allies in the Crimea, as well as that of

the current war in the Far East, show us clearly that it is not the actual numbers employed in over-sea expeditions that carry weight, so much as the strategical value of the point where they are applied—a value which is still further enhanced by secrecy of design and promptness in execution.

The dual principle of sea power is to some extent embodied in the new organisation of the Army in England. The "striking force" exists, not only for minor expeditions, but as the vanguard in an over-sea campaign.

To secure secrecy in the first blow of an over-sea venture a high state of preparation and special training is essential, and as it is not practical to so prepare a large Army, the striking force in small expeditions, the swift vanguard in larger ones, is to be kept ready.

It should be remembered that India's position gives us an enormous strategical advantage compared with other Continental nations in the exercise of this dual power. Should France or Germany desire a landing expedition of any magnitude in the Far East, the collection of men and ships to carry them is no easy matter. Should we desire the same, a few words on the cable, and five, ten, twenty thousand men, and more, with the ships to carry them, are conjured forth.

We strike 6,000 miles away from home as easily as we strike from the Channel; and the nations with interest in the East know it far better than we know it ourselves.

PART I.

OVER-SEA EXPEDITIONS.

1. Their Nature.

To study the question of embarkations and disembarkations and the training that makes for efficiency in such operations, it is desirable to have a general idea of the form which over-sea expeditions may take. They would seem to be as follows:—

1. Combined raids to exact contributions from poorly defended seaboards or to collect merchant shipping.
2. An expedition to secure some port as a base for an invasion.
3. Expeditions against the Colonies of hostile Powers or to capture coaling ports with the object of denying coal to an enemy's cruisers.
4. Expeditions to cut out an enemy's fleet that has taken refuge in some harbour defended from the sea only, or to destroy a port or coaling station that harboured commerce destroyers.
5. The despatch of an Army to a friendly base, as in the case of South Africa, or to follow to a base secured under Para. 2 above.
6. Expeditions against savage or semi-savage races, which would have an unopposed landing.

Examining these more closely it would seem that:—

1 would be carried out by a force of men accustomed to keep the sea, and impervious to weather, a force almost of marines, and

one particularly expert at disembarkations and at re-embarking. The British troops in the Mediterranean at the close of the eighteenth and beginning of the nineteenth centuries were as much afloat as ashore, and had taken part in scores of expeditions and occupations along the southern coasts of Europe, till finally Sir John Moore had brought the drill and staff arrangements for landing to a fine art. The landing in Aboukir Bay in the face of a well-placed French force was the direct fruit of the time and thought spent by him in perfecting the arrangements for operations of this class.

2. As regards a landing of this kind, the troops must expect either to be opposed in the act of landing or very shortly after, and to have to move against their objective the moment the force is all ashore. A force so employed would need to be even more thoroughly trained than a raiding force; though perhaps it need not be so inured to sea-sickness, troops and staff, more especially the latter, must have their business at their fingers' ends. Our new "striking force" exists to some such end.

3 and 4. These two operations would both be prepared to meet with organised resistance, and well-trained troops in embarking and disembarking would be as necessary as in the former cases, more especially as assistance might be expected for the beleaguered fleet.

5. A large force despatched to a friendly base or to a base already secured would naturally only require ordinary method in despatch and the discipline of a Regular Army for its successful arrival on the scene.

There have been no examples of 1 in recent times, while of 2 the acquisition of Genoa by Napoleon at the commencement of the last century is a notable instance.

The Red Road East.—Of 3 we have many instances in the past, in the prosecution of our wars with France, notably the capture of the French West Indian Isles, and the expeditions from India to capture the stations whence French cruisers and privateers interfered with the Red Road East. These included the capture of Bourbon and the Mauritius, of the Cape, Ceylon, Java, and Macao, these latter the property of the Dutch and Portuguese when the French dominated those nations.

Two unsuccessful attempts to cut out Spanish squadrons were made by us in 1800, when in August a force was landed at Ferol, and two months later a much larger one under Sir Ralph Abercrombie at Cadiz. They failed partly from want of resolution on the part of the leaders and largely because the situation and course to be followed on landing had not been properly thought out.

The two captures of Louisburg from the French are types of ventures to destroy, at all costs, fortified naval bases that harboured predatory hostile fleets, while in the expedition to the Crimea we see the intention of attacking an almost invulnerable adversary at one of her few exposed extremities.

2. The Sequence of Events in Over-Sea Expeditions.

It is the troops forming the special force for such operations as those detailed in paragraphs 1, 2, 3, and 4 of the foregoing that require careful preparation and training in carrying out landing operations. In England, the new "striking force" is to be specially trained for prompt despatch across the sea, and it might well be that

the brigades in India, near the large seaports, should receive a similar training.

If we now follow in detail the sequence of events prior to and during the despatch of an over-sea expedition, we shall get a bird's-eye view that will give us a fair idea of the action and preparation required, and from whom.

Sequence of Events Leading up to a Landing.

1. The preparation by the Government (the Defence Committee in our case) and the General Staff of plans for all possible contingencies.

2. Naval preparations in accordance with the above, such as the registration of shipping, the storage of transport fittings, and the study of the coasts of possible objectives.

3. Military preparations in accordance with the same possible objects.

4. Decision of the Cabinet on a course of action at the time of war.

5. The mobilisation of the force required, and the previous or simultaneous collection and fitting out of transports.

6. The entrainment and embarkation of the expedition.

7. The rendezvous of transports and covering fleet, either soon after leaving port or just prior to embarkation.

8. Reconnaissance of the enemy's coasts to determine the exact spot to land at. This may possibly have been fully arranged for in peace time by the General Staff.

9. The formulation and issue of the orders regarding anchoring of transports, and the disembarkations.

10. The actual landing and subsequent operations.

11. The disembarkation of stores.

12. The establishment of a base and the maintenance of the income and outflow of the force, reinforcements, stores, sick, etc., probably from a captured port.

13. The leisurely re-embarkation of a victorious force, or in some cases the hurried escape of a raid that has achieved its object and is threatened with retribution, or the still more critical case of the re-embarkation of a force that has failed and is pursued.

Of the foregoing, the preparations for items 6 and 8 to 13 is what we are concerned with. For these the training of staff and regimental officers of both Services and of the rank and file is an important factor. Their successful performance depends on an intimate knowledge of their duties on the part of all ranks engaged.

In all training, military and naval, there are two main and distinct divisions, viz.:—

a. The training of the staff.
b. The training of the *personnel.*

Again, both these can be largely carried out in skeleton, or on paper alone, especially in the case of the staff. In many details data deduced from the experience of others and the dictates of common-sense afford all that is needed to learn from.

Training of Staff.—The staff of Armies can be largely trained in this way, and the "staff tour," the practice of war in the field without

the actual presence of troops, is a simple and effective way of training officers in three-quarters of the duties of the staff. In many cases to know what is to be done and how to do it, is all that is needed, and this can be largely taught on paper or by staff tours.

It will be noticed that in many of the events which have been chronicled as occurring in the course of an over-sea expedition, there is comparatively little required of the rank and file of the Army employed other than the prompt performance of the ordinary duties of the disciplined soldier. The getting in and out of boats quietly and quickly requires no course of training such as would be necessary for mountain warfare, and no physical developments. It is of course desirable that all should be familiar with what is expected of them; but if the staff know what they have to do, and the regimental officers know by theory all the points to be arranged for, a very small amount of actual embarking and disembarking should suffice to make the force extremely efficient at this service.

The important part of the training seems to be, then, that the staff of both Services should be familiar with all the details of the sequence of events, and competent to draft plans and orders for any kind of landing or embarkation.

It is therefore proposed to discuss in detail the process of embarking and landing, and to deduce therefrom the particulars in which the staff of both Services, the regimental officers, and the rank and file should be trained, and how far this can be done by skeleton manœuvres and paper work, and how far actual practice of the troops themselves is necessary and possible. Schemes will then be suggested to carry out the training in question, and appendices attached in amplification.

The further discussion of the subject will be arranged as follows, and a summary made under each heading of the prominent points in which training and study are required:—

1. Embarkations.
2. Disembarkations.
3. Order for landing.
4. Operations immediately on landing.
5. Re-embarkations.
6. The preliminary reconnaissance.

The question of reconnaissance has been left to the last because it is rather apart from the rest of the subject. It is, however, a duty which any staff officer may be called on to perform, and the training of officers to carry it out is, from a comprehensive point of view, an important item in the practice of disembarking. It is moreover essential that *all* officers should know the points to be looked for in a coast reconnaissance, since they have reference to the every-day needs and tactics of the various arms.

The Two Services.—It should not be necessary to allude to the necessity for perfect understanding and *camaraderie* between the two Services in all combined operations; but experience has shown how often misunderstandings have occurred not only between naval and military officers but even between officers of the same Service. It almost always has been the case that the supreme officers of both Services have been in complete accord, while it has been the officers of lower rank who have found it necessary to take offence and umbrage at each other.

In war time there is no room for the mere petty feelings and fancies of human nature. There is only one line on which the Services can work together, and that is the most perfect trust in the intentions and acts of one towards the other.

There must be no feeling that one Service is "putting on" the other or scheming to save itself work at the expense of the other. Does one commander or one staff officer appear to treat the other cavalierly, it can only be through some mistake, some oversight on the part of an overworked man. Does one officer presume to order about officers and men of the other Service, he only does it because he thinks he is empowered to do so, or because the exigencies of the moment are superior to the customs of peace time. When all officers feel towards each other in such fashion, the most perfect harmony can exist; but all who have seen much soldiering, especially from the point of view of the staff, know how tired human nature is apt to quarrel with all around, and how men who should know better will lay themselves out to take offence where none be meant.

PART II.

1. Embarkations.

Embarkation from a civilised country is always a comparatively simple matter, especially when it takes place from the United Kingdom, India, or from one of the large Colonies. Shipping is always obtainable in large quantities, and where the Admiralty have been permitted to make their arrangements in anticipation of war, ships will be ready as soon as the troops arrive on the quays. Naturally, ships to take infantry can be prepared far more quickly than those to take horses—a point forgotten by the English Press when gaily criticising the War Office for sending infantry out to South Africa before the mounted troops.

Yearly Reliefs.—In our Service we are so constantly sending troops abroad in the ordinary routine of reliefs that we have a large staff of officers of both Services and of petty and non-commissioned officers who thoroughly understand the embarking of troops. In almost every regiment there are sergeants who have been on trooping duty to the East and elsewhere, which means that the actual placing of men on board and turning them down to troop-ship routine present no difficulty to us, and every port from which troops are leaving can always be well supplied with a thoroughly competent embarking staff. It is wonderful to see the promptness with which a thousand odd young soldiers for abroad will be stowed away on a trooper with the help of an embarking officer and half a dozen subordinates.

The present system of putting non-commissioned officers of various corps on temporary duty on troop-ships is excellent, and should always be kept up with a view of training men for war embarkations from the ports of the Empire.

It is important that units should be embarked as far as possible on the same ship, and as the modern policy is to charter large vessels, battalions with their transport can usually go together, and even whole cavalry regiments. Extra space on large vessels would, as a rule be filled with departmental details rather than by breaking into another combatant unit.

It is important that in the general scheme of embarking troops that are required for the landing, viz., the seizing of the coast and immediate operations, all go in the first convoy or batch of troopers, in the case where the troop-ships go in successive batches.

It is necessary that in shipping stores those required first should go in last. For instance, in shipping artillery ammunition, column wagons should be stowed before battery wagons and guns. During the despatch to Africa of the Ist Army Corps, at many of the ports it had been arranged by the embarking officers that men of the Navy should stow the artillery and engineer carriages and stores and the supply wagons. The sailors probably offered to do this in their keen desire to bear a hand, but it was very unsound, since parts of carriages and stores were unshipped and mixed up by people who did not understand them, with the result that wild confusion and hours of delay occurred on arrival. Corps must stow all their own gear under their own officers, helped, however, by a few sailors, who superintend the practical stowage so that the cargoes do not shift.

The *personnel* of departmental corps must, when possible, be embarked in the same vessels that carry the stores and equipment they will have to deal with.

Shipping of Stores. — Provisions, forage, material, ammunition, and stores must be shipped in the order in which they will be required on arrival, and a responsible official of the department concerned should be on board with them, especially in the case of stores for a sudden expedition. During the Crimea, medical stores, for the want of which sick and wounded were dying by hundreds, lay rotting in vessels at Balaclava because no one knew of their presence. The case of shipment of stores to a properly organised base in a continued war is different, since the usual consignment note explains the cargo.

In former days the various departments used to indent for sea transport direct on the Admiralty, which resulted in confusion and delay. One military head must collect all transport demands and inform the Navy of the order in which they will be required.

All stores required for the disembarkation must not only be carefully thought out but must be carried on the ships that most require them, that is to say, that horse-flats must be on the horse transport, and extra accommodation ladders on vessels carrying infantry, etc. Full provision for the landing must be made, gangways, lighters, landing guides for gun wheels, etc., embarked on each vessel in proportion. Condensers will very likely be necessary to provide water on shore till the troops move on, as was the case at Zulla (Annesley Bay), the base of the Abyssinian expedition. Wharfs may be necessary for landing guns and wagons, and will certainly be required if provision is to be made for a re-embarkation from an open beach or small port. Lumber for their construction should accompany the expedition.

Army Corps. — It is calculated that an army corps requires 250,000 gross tons of shipping, but in voyages of a few days' duration the troops could be packed much closer. For a longer voyage it is calculated that $4\frac{1}{2}$ tons per man and $13\frac{1}{2}$ tons per horse are necessary in an expedition, and this amount includes supplies for three months and all guns, carriages, and transports appertaining to an army corps. These figures only apply to large bodies of troops. For short voyages

these amounts may be reduced to 2½ and 4½ tons gross respectively, allowing for only one month's supplies.

Transports of large size, say over 3,500 tons, usually carry eight or ten boats, besides collapsible boats, capable of holding 30 to 50 men for landing purposes, and a larger number in case of emergency. One or two launches are carried also, and in big vessels there should be no difficulty in having two.

Our own Regulations provide for the physical exercise of the troops on board, and on the way to Africa pamphlets were issued to all corps regarding the care of horses at sea.

Summary.

The following points in brief are those, then, to which attention must be directed, as regards embarkation:—

1. By the staff:—
   - *a.* Units must be embarked together as far as possible, and extra accommodation filled, as a rule, by small parties and details.
   - *b.* Troops must be embarked in the order needed for landing when the whole force is not to arrive at once.
   - *c.* The *personnel* of departments should be on the same vessel as their stores and equipment.
   - *d.* Stores required first on arrival should be stowed last.
   - *e.* Equipment, boats, and all stores that are needed to effect the landing must be embarked on the ships that require them.
   - *f.* The training of non-commissioned officers in embarking routine, by detailing them as is now done for duty with the annual trooping service, should continue.
2. By the regimental officer:—
   - *a.* To the above in a general way.
   - *b.* To the methods of stowing men, horses, and equipment on board ship, and to the devices for keeping men and horses fit on board.

2. Disembarkations.

The most important operation in over-sea expeditions is undoubtedly the landing, and it is also the most difficult. As the probable presence of an enemy makes the operation still more difficult, and as preparations will almost always have to be made to meet an enemy, only the case of a landing in the face of probable opposition will be dealt with.

Now, it has already been said that the fleet of transports with or without escort, will probably rendezvous at some spot prior to any attempt at landing. This spot may be only a few miles from the country of departure, or it may be close to the objective.

When animals have been long at sea it is essential that the rendezvous should be at some place where they can be landed and exercised. Horses and mules that have been some weeks at sea are quite unfit for immediate work. Thousands of horses were lost in

South Africa from the necessity which obliged their being worked directly on landing. This applied as much to the horses composing the original expedition as to the remounts poured in later. Laminitis is almost always the result of a long voyage followed by hard work. The same applies to a considerable extent to men, unless very exceptional means of keeping them fit on board has been found.

China, 1860.—In the expedition to China in 1860, the transports assembled at Talien Bay, and the horses were landed. In the expedition to the Crimea, the landing at Varna and the prolonged stay in Bulgaria allowed of the artillery and a handful of cavalry horses recovering from the voyage from England, so that on proceeding to the Crimea it was not necessary to have a preliminary landing. The transports were ordered to rendezvous and anchor "40 miles west of Cape Tarkan," where the orders for the landing were promulgated. In this trip the French carried their troops on their war-ships—an unsound arrangement, when, as in this case, opposition at sea was possible. The British were in transports, convoyed by the fleet.

Assuming that the reconnaissance of the coast has already been carried out, and that the naval and military commanders have concluded their final personal examination of the shore, and have made their plans, the first step is the issue of naval orders for the formation of the fleet of transports.

The manner in which the fleet forms up depends largely on the nature of the coast, and is regulated by the distance from the shore of the "five-fathom line," marked on all charts, within which large vessels cannot venture. This varies very considerably; for instance, off the Isle of Sheppey and the little fishing port of Whitstable (with the exception of the Medway Channel) the five-fathom line is several miles from the coast, with a long stretch of shallow water over mud flats intervening, while a few miles farther along by the North Foreland, off Margate, the largest vessels could anchor within half a mile of the shore. In the former case the guns of the fleet could not hope to cover the landing, while in the latter they might be of the greatest assistance.

Anchoring of Transports.—It is manifestly an advantage if the transports can anchor on a broad front, within reasonable distance of the shore, and land troops simultaneously from many vessels. Compare the ease with which troops could be landed on a broad front in old Pevensey Bay, from Beachy Head to Bulverhythe, with the difficulty of landing a large force rapidly about Margate.

There is some difference of opinion as to whether it is better to form up the divisions of transport in line or in column, with regard to rate of landing, the actual amount of distance to be covered by the landing boats being much the same in each case.

We have had two considerable landings in the last half century from which to gather data: the expedition to the Crimea and the Egyptian War of 1882. In the former some 63,000 men, according to Kinglake, were landed by the Allies at the same part of the coast, and in the latter over 35,000 men were landed at Alexandria and in the Canal. In the former case a formidable opposition was to be looked for, and a Russian fleet was still to some extent "in being," while in the latter, especially at Ismailia, the war-ships in the Canal absolutely kept any enemy at arm's length. There was no difficult landing on an open beach, as there was in the Crimea in the Bay of Eupatoria.

The broader front the fleet of transports can anchor on, the better, as has been said, for a rapid landing; all the more is this the case if opposition be expected. In the Crimea the Allies anchored on a front of nine miles, and (in Kalamita Bay) the transports anchored within six hundred yards of the shore. To do this is rarely possible owing to the depth of water. There are, however, some coasts where it is possible; off Dungeness large vessels can pass within a stone's throw from the shore. In these days of long-ranging artillery, it might be exceedingly dangerous to anchor so close. After the first party had landed and gained a covering position, the remainder of the fleet might come closer in, if the depth allowed. In the landing at Aboukir Bay the boats had to row or tow for five miles from fleet to shore with the French watching and waiting for them.

Disembarkation at Dawn.—The disembarkation will, as a rule, commence at daybreak, the transports arriving shortly before. Were they to approach by day, troops to oppose the landing might be collected, and their presence not come as a surprise at dawn. Any large disembarkation at night would be a difficult operation; but there is no reason why a small force of picked troops should not arrive and land during the night, and thus cover the first landing in force.

Crimea.—It is astonishing how fast troops can be landed with good arrangements on a suitable coast. In the landing in Kalamita Bay, before Eupatoria, between 7 a.m. and 6 p.m. on the 16th September, 1854, 30,000 men and 24 guns were landed. The arrangements were made by Captain (afterwards Admiral Sir W.) Mends, R.N., whose figures and data (codified when he became Director of Naval Transport) are the basis of our calculation in such matters to this day.

It is essential that all staff officers of both Services should understand the collection and marshalling of the landing flotillas. A sample of normal formations is given in Appendix No. II. Naval officers must be in command of the flotilla from the moment the boats are full of troops till they touch the shore and the troops land. Wolfe and Abercrombie, with immense experience of these operations, always insisted on this point.

Order of Landing.—The order in which the troops are to be sent ashore must be thought out. Cavalry and artillery take long to land, and cannot be safely put ashore till an infantry covering party has secured the immediate landing. Cavalry are, however, wanted for reconnoitring and advanced work as soon as possible, though in close countries, in which roads lead inland, cyclists can take their place. It should be remembered that directly the transports anchor, the windsails cease to act, and the horse-decks get very hot, so that, as soon as safety permits, the cavalry should be landed. The experience of the past shows that the old method of dropping horses into the water and letting them swim ashore not only exhausts them, but breaks their hearts for many days to come, and should only be resorted to in emergency. When troops were sent to Cyprus in 1878, the horses were landed in flats with fall-down sterns, so that they could walk off. Horses are now slung off ships in boxes when possible, instead of the old slings. Boxes are just as quick, and do not terrify the animals. The best method of forming wharves on which to land animals and guns from lighters is for the first lot of

flats, specially made to that end, to be moored as wharves on the beach, and the remainder then come alongside. A very little arrangement makes this work well. When there is not great emergency, it is as well to land infantry at these piers so that they may be dry-shod if possible. It is well in war to legislate to the level of the weak constitutions when possible.

Field guns are of course desirable things to have on shore, and several guns with a few teams should be landed as soon as a lodgment on shore has been effected, when they can be drawn into position in succession. If guns are needed with the covering party, it may be possible for parties of blue-jackets to draw them. This has often been done in the past, notably at Aboukir.

Beach parties of blue-jackets are a great assistance to help haul in and re-launch boats, moor wharves, and the hundred and one jobs for men who can haul on a tackle.

The clearing of the beach is one of the important duties for the junior staff. Troops landing must be formed up and moved off at once, stores stacked or removed, and every effort made to control the disorder inseparable from such an operation.

An approximate table of tonnage is given in Appendix I. for the embarkation of various forces. In the recent landing in Essex the whole force of a division and cavalry brigade were carried on only ten large transports; but it has been pointed out that when troops are only to be a night at sea they can be packed out of all proportion to the space required for a longer voyage.

Horse-Flats.—It is usual to provide horse-flats in the proportion of forty for a division, boats at the rate of ten per large transport, landing some 400 men per trip from each ship. Horse-flats are distributed among the transports and collected round those from which horses, etc., are to be landed. There will also be many boats available from the fleet.

Boats must always be cleared of all superfluous fittings and stores, and the most absolute silence must be maintained by the men in them. If boats are not too full, the men other than the rowers or crew may obtain shelter by lying down, should the landing take place under fire.

Sequence of Events in Landing.—To examine now all the process of disembarking in detail, a review of the sequence of events is desirable. They would be as follows:—

a. The issue by the naval commander of the orders for the anchoring of the transports and the assembly of the fleets, boats, and launches.

b. The naval orders for the formation of the boats and launches of the first landing party. This first set of boats will contain the force to land in the teeth of opposition, or seize the first covering position. It must obviously be very carefully marshalled and moved to the shore.

c. The issue of orders to the troops by the military commander explaining the naval measures, and the support that the fleet's guns will give, and the detail of the landing, with instructions for the commander of the covering party, and directions for parties to be left on board, with orders regarding baggage and rations, etc.

d. Now follows the muster of launches and boats round the ships from which the covering party and troops for the first trip are to be drawn, and the filling them with the troops, who would consist of infantry, with some sappers.

e. Then the boats make for the shore, towed by launches, casting off and forming line when near the shore or covering under fire. (A plan of a party of boats as marshalled for landing is given, *vide* Appendix No. II.)

f. The actual landing now ensues, with the mustering of the leading companies as they jump from their boats, and the prompt advance to the *first covering position* (*vide* paragraph to follow on Operations on Landing).

g. With the landing parties come staff officers of divisions and brigades, with coloured flags to mark for their divisions, who apportion and mark out the beach for the various units. The boats coming ashore carry flags of a similar colour, according to the brigades their cargoes belong to. The next batch of troops follows on as quickly as possible, in no particular formation, the troops merely forming at once on their own flags as they come to shore.

h. As soon as sufficient troops have landed, the advance is made to the *main covering position*, from the protection of which the full landing is made, viz., guns, horses, and wagons, by which time the force is ready for its objective, be it a dash on some port, or an advance into the interior.

i. As soon as the combatant striking force is landed, the Navy and special staff concern themselves with the formation of a base, or wait till the Army has seized the necessary port.

The moment the troops are on shore, even the moment the first covering party are safely lodged, preparations go forward against the failure and re-embarkation of the force.

Summary Regarding Disembarkations.

The following are the main points to be studied:—

Naval Staff.—The requirements of a disembarking force, and the system of marshalling and forming landing boats and of signalling with the shore.

Army Staff.—The same, less the more technical details that a naval officer would know: the principles under which the covering parties act, and the administrative needs of the force on landing.

Regimental Officers.—A general idea in outline of the foregoing, so as to understand the trend of the orders issued, with a detailed knowledge of how to get his men and equipment and horses in and out of boats and lighters, as well as a knowledge of the principles of tactics on landing (*vide* Section 4).

Troops.—Training in the manner of getting in and out of boats, and in the handling of horses, guns, and vehicles in disembarking.

Instruction in the making of rough rafts and wharves from lumber is desirable.

3. Orders for Disembarkations.

In all operations on a large scale, quite the most important point is the issue of clear, complete, and concise orders. In a disembarkation, where the dissemination of orders, once landing has commenced, must be an exceedingly difficult matter, good orders are absolutely essential, and every staff officer in the force must thoroughly understand what is required in them.

Orders for the disembarkation must necessarily be long, as a great many points will have to be dealt with, and many different departments have to receive instructions.

It will be best, therefore, to issue them in several parts, as follows:—

1. A summary of the naval orders so far as they affect the troops.
2. Orders for the landing of the troops, showing the sequence in which they land, and detailing the covering party for the *first* and *second* covering positions; also details of rations, ammunition and kit to accompany the troops.
3. Orders for the operations of the covering force, the spot whence subsequent orders will issue, and instructions for the cyclists and other mounted troops landed early in the proceedings.
4. Orders for the departmental corps and parties left on board each ship with baggage, etc.

It is always desirable to leave out of orders details which competent subordinate commanders would naturally see to of their own accord. In our previous campaigns many instances have occurred of operation orders being clogged with grandmotherly routine orders.

There is, however, often the suspicion on the part of the supreme commander that his plans may be balked by the forgetful folly of some junior; and to remove this it is permissible to issue to all concerned some "instructions" to insure such details as water-bottles being filled, breakfasts issued in the morning, etc., and other items of insurance against forgetfulness, which, however, will not speak very highly for the confidence of the general in his officers. Such instructions would usually be issued a day or so before the landing orders, or be embodied in force standing orders.

The orders to be issued may therefore be briefly described as follows:—

1. Naval orders.
2. Landing orders.
3. Operation orders.
4. Detail orders.
5. Miscellaneous instructions.

Under each of these headings the following are the essential points to be observed and provided for:—

Naval Orders.

This is a matter which a landsman who is not fortunate to have the assistance of a naval officer must approach with much diffidence,

merely detailing essentials as best he may. The orders would presumably provide for the following:—

a. Orders for the formation and anchoring of the transports and fleet.

b. Action of the war-ships to cover the landing with their guns.

c. Orders for the assembly of the flotilla of launches and boats.

d. Detail of the movements of the flotilla to and from the shore and names of officers in command of them.

e. Details *re* signals.

f. Arrangements for signalling between ships and shore.

g. Details regarding beach parties of blue-jackets, teams for man-handling field guns, landing parties with naval field guns or machine guns.

Landing Orders.

The section of orders dealing with the actual landing should provide for the following important points:—

a. The manner, means, and hour of landing and of leaving the ships.

b. The order in which the troops disembark.

c. Instructions regarding the troops composing the first trip, with detail of the first covering party, and name of officer to command; then details of main covering force and its commander.

d. Orders for the landing of staff officers of brigades and divisions, and detail of distinctive flags for the rendezvous on the beach of those units.

e. Orders regarding kit to be carried by the soldier, rations on the person (usually three days), and amount of ammunition to accompany the force.

f. Instructions for the immediate construction of any piers or wharves required for the landing of guns or horses.

g. Information as regards the whereabouts of the G.O.C. and the central signalling station, and the issue of further orders, and a statement of the naval arrangements for communication by:—

1. Signal between the ships and shore.
2. Orders *re* establishment of dressing stations on shore for wounded and injured.

Also, over and above these orders, it is essential that the possibility of failure should be recognised and earnestly provided against. Confidential orders legislating for this must be issued to commanders of brigades, etc. Failure, of course, is not an admissible word to be used to the troops, but preparations for failure and re-embarkation as referred to under the latter heading can be made without at all raising "despondency and alarm."

Operation Orders.

a. Information regarding the enemy.

b. The intentions of the G.O.C.

c. Instructions for the immediate tactical movements of the covering party furnished from the troops landed in the first trip.

c. Orders for the action of cyclist scouts, and the cavalry as they land. Instructions regarding the destruction of any telegraph wires, the sending of false messages, etc.

d. Orders for the main covering force, which will take up a position sufficiently far inland to allow of the whole force landing unmolested.

e. Information regarding signalling connection with G.O.C., and probable issue of further orders.

g. Instructions for disposal of wounded.

Detail Orders.

These will refer to the following:—

a. Orders regarding any units who do not land with the main force.

b. The landing of stores.

c. Vehicles to be taken.

d. Orders for an officer and party from each corps to be left behind to land regimental baggage, etc., and detail of troops to carry out construction works.

e. Orders regarding reserve of water, if such be not known to be handy on shore.

f. Instructions for the making of piers and wharves or the repair or extension of any existing accommodation.

g. Instructions as to field treasure-chest and payments generally, since the abundance of local supplies may depend on prompt payments.

Miscellaneous Instructions.

These depend on the amount of confidence of the commander in his subordinates, or any special precautions necessary in the climate to be encountered.

4. Operations on Landing.

Apart from the plans of the supreme commander and the measures to give effect to them, there are certain tactical steps to be taken by the troops first reaching shore which are more or less common to all landings in the face of possible opposition.

If the landing is to be made in the teeth of an enemy, as it was at Aboukir and Louisburg, and the boats approach the shore under fire, it is obvious that the first handful of men to touch land must take some action to cover the landing of the remainder.

When there is any choice in the point selected for the landing, it is improbable that there will be actual opposition to the beach party, since, until the threatened point is known, troops destined to oppose the invasion cannot well leave some central spot. The landing force, which would probably not put in an appearance till daybreak, might expect a few hours in which to effect a lodgment on shore. Should the invaders find an enemy ready to dispute the landing, they may often be able to move 50 or 100 miles along the coast.

Range of Guns.—The range of modern field guns will make a landing by boats in the face of an enemy in position a more dangerous matter than in the days of Sir Ralph Abercrombie; but the far more powerful guns of the fleet, with their enormous range and the command from the deck, will to some extent counteract this. If it is expected, however, to find the enemy's guns in position, it will be necessary for the transports to anchor some miles from shore, which will much enhance the difficulties of the landing. These are points which will require due consideration in the plans for the landing.

The reconnaissance of the coast, which will have been made previous to the selection of the spot for landing, will show the lie of the ground, and the troops in the first boats, termed the "covering party," must move forward, directly they have formed, to occupy the first position, where they will be joined by all the troops from the first trip.

Covering Party.—The distance of this position from the beach depends of course on the country and on circumstances, and may vary from two or three hundred yards to a mile.

Under cover of this party the disembarkation proceeds apace till enough troops have landed to permit of the "covering force" of the strength perhaps of a division or brigade, advancing to the second covering position, which will be sufficiently far inland to allow of the covering force manœuvring comfortably, and of the remainder of the army, with horses and stores, landing undisturbed by long-range gun fire.

This covering force may very possibly have to drive off some hostile troops who have by now arrived to dispute the landing. At the same time, it is generally felt that, as any particular landing may be a feint, the despatch of a large force to attack them while landing may leave some other point bare to the real invasion, while a small force detached to attack the landers only courts disaster, and therefore it is the wiser policy not to attempt to interfere with the actual landing, except under peculiar and favourable circumstances.

If there be an enemy with guns drawn up to receive the invaders, and it is decided to try and force a landing under the guns of the fleet, the boats advance much as described in Appendix No. II., seize the nearest point that affords any cover, and wait till enough men are ashore to attack the enemy. The operation would not be a pleasant one.

Failure.—It might easily be that the attempt to thus force a landing may fail, and confidential instructions providing for this must issue with the orders for landing. If this failure takes place somewhat later in the proceedings, it comes under the heading of re-embarkation, and is discussed in Section 5.

It is desirable to get some cavalry on shore the moment it is seen that the immediate landing will not be disputed, as the provision

of information of the enemy and also their mystification is essential. Cyclists can be landed with the first party in considerable numbers if there be roads on shore, and can be pushed on at once. The object of advanced cavalry and cyclists would be to cut wires or send false telegrams, destroy or secure railway bridges and capture rolling stock, as well as ascertain the whereabouts of any enemy.

Cyclists.—In this matter of landings, the far-ranging action of cyclists has not attracted the attention it deserves. It is interesting to reflect on the ease with which some two thousand cyclists might be landed out of a single pleasure steamer, say on Margate Pier, any fine night in the year, who within twelve hours of leaving the opposite coast might hold in some strength the approaches to the Isle of Thanet.

As the van of an invader or as a feint to a landing elsewhere, such a force would be extremely effective. The covering party, then, may well have a considerable number of cyclists, who in an enclosed country are far superior tactically to mounted infantry.

Summary.

The Staff.—A Knowledge of the Conditions of Landing.—The regimental officer should be equally conversant with them, while units should practise the occupation of first and second covering positions as an ordinary tactical exercise.

5. Re-Embarkations.

Re-embarkations have many forms, varying from the leisurely return from a victorious campaign, such as the Boer War and the Crimea, to the hurried escape of a retreating or vanquished force.

The former present no difficulty that ordinary discipline and routine organisation will not overcome, but the latter are extremely hazardous operations, and call for organisation and preparation of a very high order. It will be remembered that Sir John Moore's army won the battle of Corunna, and thus gained time to embark almost unmolested. Had the battle been lost, the embarkation would have been far more difficult, though, as it was, most of the horses had to be destroyed.

From the moment that the army commences to disembark it may be necessary to re-embark it, and preparations for this must be put in hand at once. The following are the different circumstances under which a re-embarkation would usually become necessary:—

a. The miscarriage of an attempted landing either from natural causes or the presence of the enemy in force.

b. A lost battle after the army had landed, owing to heavy loss in men or *matériel.*

c. The finding of the enemy in too great force to be met by the force landed.

d. The retreat to the sea from some distance inland, when the attainment of the object had been found impossible, or some special object gained, and there is no need to await the enemy's coming.

Stamford Bridge.—An example of the first would be Sir Ralph Abercrombie's failure at Cadiz in 1800, after landing a part of his

force unforeseen difficulties and an outbreak of cholera made him change his plans; while to go further back in the past, the sweeping defeat of Harold Hardraade and his Norwegians by King Harold Godwinson at Stamford Bridge, and the former's hurried flight to his ships, is a good example of the second; of the third, Sir John Stuart's withdrawal from Italy after his victory over the French at Maida is an instance; while the historical illustration of the fourth is the bitter retreat in the depths of winter from Salamanca to Corunna.

Base.—The place of landing may become the permanent base of the expedition, or that expedition may have the capture of a more suitable spot as its first objective. Even in the latter event it will be necessary for the fleet and transports to wait for a few days until it be seen how the expedition fares. If it be successful, they move round to the new base, and if not, will have to re-embark the force.

Since the greater includes the less, it will suffice to discuss the more difficult operation—the re-embarkation in haste with an enemy in pursuit.

On the nature of the resistance to be expected of course depends the urgency of the preparations for re-embarkation. If the result of the actual landing be doubtful, and there is any chance of the force being driven back before it can establish itself, then preparation for the re-embarkation must go on *pari passu* with the landing; but, as a rule, it will suffice that these be put in hand the moment the expeditionary force is on shore. As has been noted in the paragraph on orders, confidential instructions for an immediate re-embarkation in case the first landing party even cannot make headway, must form a part of the orders for landing.

Defence of Landing Point.—The reconnaissance of the coast may include information on the defence of the landing point; at any rate, this must be at once taken in hand, and a position selected for covering a retreat to the ships, and also sites for works selected. These should be executed as soon as possible, especially if the point of landing is to be the permanent base. The lines of Torres Vedras are the standing example of a fortified base, to protect an invading army till reinforcements can arrive or a beaten force re-organised. The construction of these lines was the work of months, and showed the forethought which marks the great commander, and though such an undertaking was the result of very special circumstances, yet equal forethought on a lesser scale is essential when once the landing has been effected. The base commandant, whose duty it will be to prepare for a re-embarkation, must be a man of energy and ability, and must be provided with a sufficient staff.

The re-embarkation may be from a captured port secured after the first landing, and would be an easier operation than from the open beach.

Difficult and lengthy as is the landing of horses, guns, and wagons, their re-embarkation is a far more complicated matter, and unless very carefully provided for, the loss of both horses and guns might easily follow. It is not a very complicated proceeding to hustle guns and horses from lighters on to a beach, but the converse is a very difficult problem. It is absolutely essential that a considerable number of wharves and piers should be constructed in proportion to the number of transports that have such cargoes.

Working Parties. — The naval and military authorities must come to some agreement on this matter, and must

settle whether any troops must be left behind for the purpose, or whether the *personnel* of the Navy can do the work. It is important that ample lumber for the purpose be brought with the expedition, as well as platforms and gangways. It will probably also be necessary to leave some engineers at the base to arrange for the defence of the landing point. The provision of a large quantity of water for men and animals retreating must be arranged for, if there is no natural supply near the shore. It may be necessary to establish large condensing stations, as was done in the Abyssinian Expedition, by landing engines or anchoring condensing boats near the shore.

If the invaders be not driven into their boats in the act of landing, but are forced to retire from the interior, the operations prior to the return to the shore will be those of an orderly retreat; the trains and impedimenta, followed by the cavalry and most of the guns, will arrive in succession before the infantry, who will be holding on to the covering position, from which they will endeavour to withdraw as soon as the other arms are on board. Of course, it may be that the enemy are strong enough to force a more hurried embarkation, and it may be necessary to sacrifice much material, as General Hope sacrificed all except the fittest of his horses after Corunna.

Re-embarkations—Summary.

The chief points here are, as previously, almost all for the staff. An intimate knowledge of the requirements of a re-embarking force and of the varying conditions that may occur, and suitable and adequate preparation for the operation at the time of the despatch of the force.

So far as the troops are concerned, there is nothing to be practised. The drill and discipline that got them ashore will get them off, provided always that they have not been demoralised in the interval.

Sir John Moore's force was not demoralised, and had retained, even in a most trying retreat, that discipline and training that he had inspired. The force that Lord Wellington led back from Burgos in that terrible winter of 1812, had its haven at Ciudad Rodrigo been a base from which it was to escape by sea, could not have expected to embark save in fragments, *minus* all that makes an army.

Regimental officers should be familiar with the general difficulties and principles of a retreat by sea.

6. Coast Reconnaissance.

There can be no question but that a detailed knowledge of the coast on which an army is to disembark is essential to a successful landing that has any prospect of meeting with resistance. Where the general staff has been permitted to carry out its duties thoroughly, considerable information regarding all coasts on which a landing comes within the bounds of possibility will have been accumulated and kept up to date. As, however, many varying considerations affect the choice of the exact spot for landing, it will almost certainly be necessary to carry out a reconnaissance to furnish details for the tactical and administrative conduct of the landing.

This to be carried out completely should be done by staff officers landing by night or at daybreak and passing over the adjacent ground. A very small escort would probably suffice to prevent the inhabitants molesting them, or they might attract less attention if alone. From their reports the naval and military commanders would, on conducting a personal reconnaissance from the sea a day or so ahead of the fleet, be able to frame their landing orders.

Every staff officer should understand how to conduct this coast reconnaissance before he is fit for a post in a force trained for over-sea operations.

The points that must be known resolve themselves into two divisions, those necessary to *select a certain coast* for the landing, and those necessary for *framing the details* of the landing.

Intelligence Department.—The former would certainly be in the possession of the intelligence section of the general staff. The latter would perhaps be also known in the case of some very special spot. For instance, we may be quite sure that Pevensey Bay has been most minutely reconnoitred, but even then it would be desirable to send officers ashore who could guide the troops on landing, while in ordinary cases the minor details would only be forthcoming by means of this personal reconnaissance.

Selection of Coast for Landing.—The following are the main points to be looked for in a reconnaissance of a landing point:—

1. Points to be determined before selecting a locality. Neglecting the question of the strategical selection of a locality with reference to the object in view, the main points to be ascertained would be:—

a. The suitability of the beach (on a rocky surf-beaten coast a landing would not be possible).

b. The prevailing winds at the different seasons.

c. The distance of the five-fathom line from the shore (always marked on charts) and the nature of the holding ground for the anchorage.

d. The depth near the shore.

2. The points to be ascertained by reconnaissance after a locality has been decided on.

Naval.

a. The lie of bays, promontories, and mouths of rivers. Good anchorage, room for the transports to form up (ships that swing need four hundred yards between them, and only three hundred if moored).

b. Capacity of bays and harbours.

c. Whereabouts of surf and smooth water, rise and fall of the tides, and the set of tides and currents.

d. Soundings close to shore.

Military.

e. The front available for landing.

f. The presence of wharves and the facilities for making others.

g. The nature of the beach, and the ground adjacent on which troops would have to form up.

2.—*Coast Reconnaissance.*—The nature of the country immediately inland, including positions to cover the first landing party and the main disembarkation, the direction of the roads, the position of obstacles that would cover the landing (as existed in the salt lakes that covered the landing in the Crimea).

a. The position of the enemy's railways and telegraphs adjacent to the point of landing, and any position where he could interpose between the invaders and their objective.

b. The water supply on shore and the supplies of fuel and local transport likely to be available.

Information would also be desirable on the probable or possible action of an enemy opposing the landing, and the cover he could obtain from the fire of the fleet. Officers accustomed to observe points of military value would find many matters not recorded here worthy of report.

It may be possible that an army would not re-embark at the spot where it landed or had made its base, or might be compelled by defeat to escape elsewhere, in which case officers would be sent, as Sir John Moore sent them, to find a port whence the army could re-embark and prepare it for the operation; but in these days of railways and telegraphs this matter would be far easier to provide for than in his day.

The following points give some idea of the details to be looked for when reconnoitring beaches and harbours:—

Beaches.—Seawall, jetties, groynes, cliffs, openings, ramps, rocks, shingle, sand, facilities for landing horses and carriages, effect of tide, possible improvements.

Harbours.—Docks, wharves, quay accommodation, piers, depth in basins, effect of tides, how many ships come in on a tide, space on quays, rails, sheds, storehouses, steam cranes and donkey engines, details of the normal trade, and many cognate points.

Climate.—It need hardly be said that the climate is a question that needs great attention; but this is a matter for the General Staff in times of peace, so that an expedition may be suitably equipped to resist difficult climatic conditions.

Staff officers who have been trained to observe their surroundings and for reconnaissance generally will find no difficulty in making a useful coast reconnaissance.

PART III.

THE TRAINING OF TROOPS.

It has been shown in the foregoing that an efficient staff is the main essential for successful oversea work, with good troops.

The training of the staff, then, is all-important, and this can be carried out very largely in all cases without the presence of troops.

A full-dress rehearsal is no doubt an excellent thing, and to men who have the details and theory of embarkations and landings at their fingers' ends, landing manœuvres like those carried out in Essex this autumn come as the coping stone, and are full of valuable lessons.

Such manœuvres are, however, costly affairs, and are not to supply the place of preliminary training, which should be carried out much as follows:—

Officers.—*a.* Study of the requirements of the various stages of oversea expeditions.

b. Practice in drafting orders for the assembly, embarkations, landings, etc., with the accompanying instructions.

c. Actual reconnaissance of coasts as done by officers at the Staff College. For practice in drawing up the orders for assembling of troops as they land, occupation of covering positions, arrangement of stores, etc., fairly good opportunities may be found by assuming that a river bank represents the seashore, and formulating a special idea accordingly. The line of road even, especially where it runs through common or moor land, is a capital substitute for a coast line, in exercises of this sort.

As regards the regimental officer, it has been shown that a general knowledge of the points in which a staff officer should be expert is desirable so that he can follow the preparations that are being made for him. He should be exercised in the theory by carrying out on paper landing schemes on a small scale and minor practical schemes connected therewith, and might also carry out a coast reconnaissance, or arrange the details for the landing of a brigade, on ground assumed to represent the seashore, as referred to in the preceding paragraph. An example of schemes of this sort is given in Appendix II.

Troops.—The detailed examination of the process of a landing shows that there is little that can be taught the rank and file that they do not acquire in the course of their ordinary training, but that some little practice is desirable in filling boats from the sides of the transport and in forming on shore. Again, to encourage the interest of the men in the operation some practical work is desirable. It is not, however, necessary to hire huge transport fleets for this.

It is suggested that excellent practice can be had by the following simple methods:—

a. In accordance with some general scheme of landing, duly outlined, a battalion or squadron might form up on the sea side of the road, across some open common of which the road represented the coastline. The troops should form up in lines of parties representing boatloads, as boats form up on approaching the shore (*vide* Appendix II).

The infantry would be in half companies, a fair boatload, and the cavalry in parties of eight or ten. On the order to land they file out from each party, rally, and form up to advance in accordance with the orders for the covering party.

This exercise is, of course, very much of the kindergarten order, but its execution once or twice would give everyone an idea of what is required.

b. A more realistic exercise can be carried out on any river or the Basingstoke and Hythe canals, etc., where barges or pontoons are obtainable, by embarking the men by narrow gangways on one bank, and landing them on the opposite bank, or a bit up or down stream to give the distance to be traversed by the boats. At any rate, the second boatloads should not be allowed to arrive for half-an-hour or so, while the first party make the best lodgment they can. In carrying this out for artillery or cavalry, a shelving landing place and beach would be necessary, but of course, infantry can scramble out anywhere. Unless sheers were rigged to sling horses and guns on board, it would be necessary to arrange for embarking piers or wharves.

By simple arrangements such as *a* and *b* troops can be familiarised with much that makes for a successful landing.

c. Still more practical work would be possible in many localities with very little expenditure. It would be perfectly feasible with all the men-of-war, launches, and boats at Portsmouth to arrange for a flotilla that would hold a brigade, embark them at Portsmouth Harbour, and then proceed exactly as for a landing party, form up as in Appendix II., and land on Alverstoke beach or farther up the Solent, and manœuvre on landing.

If still more realistic work were required, the troops leaving Portsmouth might do so by passing through ships moored at the quays, entering the boats by the ship's companion ladders, thus giving regimental officers the opportunity of marshalling their men into boats from the decks and seeing the amount of time such proceedings take.

Excellent work on a smaller scale could be arranged by putting men on boats at the Brennan piers and Submarine Mining Wharf on the Isle of Wight and landing them on the beach at Hurst Castle. There are many places all round the coasts of England and the Indian ports where instruction of this kind can take place adjacent to military centres, with trivial expenditure of money.

If these exercises were all made to fit in with the framework (in "General Idea" form) of a larger scheme, and were superintended by naval officers, the two Services would get that opportunity of working together which has been wanting in the last hundred years, and naval officers would get sufficient insight into the requirements of a landing, which, added to a knowledge of the subject to be acquired from hand-books and the practice of schemes on paper, would be all that is necessary for them.

CONCLUSION.

After the detailed examination of the whole process of disembarkation and embarkation in the foregoing pages, it would seem

perfectly clear that the whole matter rests on the efficiency of the staffs of both Services, given an ordinary well-trained and equipped Navy and Army. At every phase of an over-sea expedition it has been shown that no special qualities, apart from those essential to a soldier, will be called for. The solution of the problem is to organise and to train your staff of both Services in all that will be required of them.

It is popularly supposed that a disembarkation on the open beach is an extremely difficult and hazardous operation; but it has constantly been carried out in the past with success, while the example of the recent landing in Essex, when 12,000 men with their horses and guns were landed ready to oppose any defending force in three hours, proves that under favourable circumstances and good management it is an easy one. It furthermore proves the conclusion arrived at in these pages that the troops themselves require little special training. It is evident that the staffs of the two Services had been thoroughly steeped in the requirements of the operation, with the result of unexampled success so far as the experiment went.

Conjoint Practice.—It may then be accepted that the conjoint practice of Navy and Army that we require is not the expensive full-dress rehearsal, extremely valuable though that be, so much as the careful training of the respective staffs and their joint practice in skeleton operations. Had the recent experiment resulted in delay and confusion, it would have of course given the lie to these conclusions, and we should have been forced to admit that troops and regimental officers needed constant practice.

The landing in Essex has raised immense interest in the Services in this class of operation, and it is wholly desirable that interest in what is really the normal form of gambit in this country's wars should be maintained in the Navy and Army. The landing exercises, carried out something on the lines of those suggested in Part III. of this essay, will have the effect of keeping the Army mind fixed on the importance and recurrence in the future of such operations, while the staff tours in skeleton, both for military officers and parties from both Services, will familiarise officers with the problems that present themselves.

In this essay very little has been said about the Navy, partly because the writer is a soldier so situated that he cannot call a sailor to his counsels; but more because it is evident that the mustering of transport fleets and their anchoring and convoy present no difficulties and no new problems to the sailor, and it is only where the staffs of the two Services meet that there is anything to be practised or learnt by naval officers.

Fallacies.—Articles have appeared in the Press since the Essex venture contrasting the conditions under which a force landed in the teeth of opposition a century ago and those that will obtain in the future with modern weapons, and dwelling on the impossibility of General French's landing had he been opposed. It is of course true enough that a landing like that at Aboukir and Louisburg, desperate then, would probably be impossible now, but writers to this effect overlook the lessons of history and the strategic conditions. Rarely have landings been opposed, for the same reasons that a district fire engine is not kept at any particular private house. Except where there be only one possible part of the coast where a landing could take place, the placing of troops on any particular shore

could only mean that they would be left there extended while the foe landed elsewhere.

In the defence of a modern position, we do not occupy our selected line, but keep the bulk of our troops in a central position till we know where the blow will fall. So in defending a country against a landing, the strategist must wait till he knows where it will be attempted, while remembering that a feint will probably be made to draw him in the wrong direction. It is probable that in the future as in the past, landings will be unopposed, at any rate so far as affects the establishment of a sufficient covering force on shore to allow of the remainder landing in safety.

Lessons of the Past.—In this essay, no extensive reference to the landing operations of the past has been made in drawing lessons for our own use, because as a rule sufficient details are not forthcoming to study the minor points of organisation which miscarried or induced success. The sweeping changes which steam has made in most naval conditions, moreover, render much of the experiences of other days useless, and it is only from Admiral Mends' copious Crimean notes that much of value can be drawn. A detailed examination such as has been attempted, gives us more to go on than the records of out-of-date methods. We are indebted to history for the bed-rock principles of strategy rather than to the details of execution.

In preparing our Services for joint operations under existing conditions, it is important that we should have a recognised hand-book for our guidance, and it is suggested that a special supplement to the invaluable "Combined Training" should be added to deal with this matter.

APPENDIX I.

Boats Available for a Landing.

The following shows the number of boats that will generally be available for a landing:—

	Pulling Boats.	Horse Flats.	Steam Launches.
Per Transport ...	10	1	1
,, Battle-ship ...	6	0	2
,, 1st Class Cruiser	6	0	2
,, 2nd Class Cruiser	3	0	1 (small)

The number of transports required for an army corps depends on the size of the ships taken up; 64 were required to take the army corps to the Cape, and then one brigade of field artillery had been sent before in the ordinary course of relief. The gross tonnage required is some 250,000 tons.

If we assume that 64 transports will convey an army corps, then the total number of landing boats available will probably be as follows:—640 transport boats (30 men each, or 19,200 men in all), with 64 horse flats and 64 steam launches.

If the fleet consist (as it is estimated it should) of 6 battle-ships, 6 first-class cruisers, and 20 second-class cruisers, then there would also be available 72 large war-ships' boats, holding 40 men each, or 2,880 in all, 60 smaller boats, holding 33 men each, or 1,980 in all, and 24 large launches with 20 smaller ones.

This totals some 772 boats, with a carrying capacity of some 24,000 men.

From the foregoing it is clear that a division, less some of its artillery, could be landed easily at one trip, or all the infantry of an army corps

APPENDIX II.

Schemes for Landing Exercises.

The following scheme, childish though it may seem, has the merit of directing the attention of all ranks to the operation in question, and is also capable of infinite development according to the initiative of officers, for any branch of the Service (*vide* Part III.).

Special Idea. (*Vide Maps of Aldershot District.*)

No 1.

The road from Ashe to Pirbright represents a south-easterly coast-line. The First Division is landing at Claygate Common. The battalion is part of the covering party, and is being landed in 18 pulling boats towed in strings of six by three launches. As the boats near the shore they cast off and are pulled into line some twelve yards apart.

Note.—The battalion is formed up in line of half company columns at twelve yards interval to represent the line of pulling boats with freights as they touch the shore. On the order to land, the men file off in any order from their boats and re-form on their company commanders, lying down till they get further orders. The battalion commander, who may be considered in command of the covering party, is in the centre (representing the towing launch), and issues his orders for seizing at once a covering position.

If it be assumed that the disembarkation would take place from several transports, and that only six boat-loads (three companies) of each battalion would be landed in each trip, then only three companies at a time may be allowed on shore, or the other companies may be treated as part of other battalions of the brigade and be manœuvred as such to the first covering position.

No. 2.

Reconnaissance.

A coast reconnaissance on the same piece of ground might be set regimental officers, to give them an insight into landing problems, on the following lines:—

Special Idea.

The First Division will be landed at daybreak the day after to-morrow on the coast below the Fox Hills. General reports on the practicability of the coast have been received, but a detailed report is required.

Captain A—— and Lieutenant B—— will be landed by night opposite Claygate Common, and will report as follows:—

a. On the shore, showing nature of beach and adjacent land, space available for the troops to form, whereabouts of water for men and animals, and kindred points.

b. On the country adjacent, showing the covering positions to protect the main landing, the roads inland, water supplies, food and forage, fuel, transport available locally, position of nearest telegraphs and railways, destructible bridges, villages and country houses where troops could be billeted the night after landing, etc.

c. They will also mark out on the shore places for the different units to assemble at as they leave the boats, and for the stacking of stores and supplies.

No. 3.

It is not considered necessary to give detailed examples of the larger schemes for the joint training of the naval and military staffs, for such are merely the working out in skeleton of the whole process of landing a given force in a given spot, while joint reconnaissance might be commenced with the approach to shore in a launch of the officers in training, in accordance with general and special ideas, followed by the examination of the shore by naval officers from the sea, and the joint reconnaissance of the land in accordance with the principles detailed in Part II., Section 6.

No. 4.

An example, however, is appended of an exercise for small parties of troops as suggested in Part III., from some such port as Portsmouth to Anglesey Bay or Hurst Castle.

General Idea.

An expedition approaches the coast of Hampshire to land in Anglesey Bay. Strength:—Two divisions and a cavalry brigade.

Special Idea.

The transports carrying the first brigade (or whatever force is to be exercised) have formed line 400 yards apart, some two miles off the shore off Alverstoke.

NOTE.—The troops representing this force having embarked in boats and launches supplied by the Navy at Portsmouth, Gosport, are brought round to Anglesey Bay and form up the launches in line with their boats in two, some 400 yards apart, and some little distance from the shore, and advance till within a hundred yards or so, then casting off, form line and pull the remaining distance to the beach.

Orders for the landing might issue as follows:—

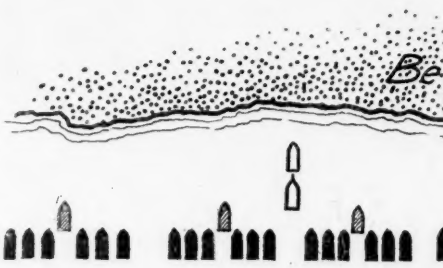
1st Brigade Landing Orders.

At sea, dated ——.

1. The transports will anchor before daybreak to-morrow in Anglesey Bay, when the whole force will land under cover of the guns of the fleet, the 1st Brigade leading and acting as covering force.

APPE

General plan of



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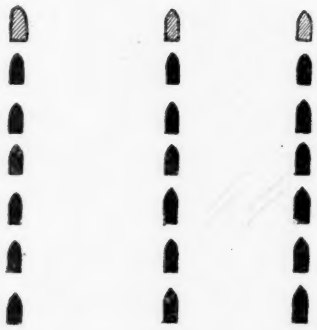
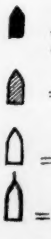
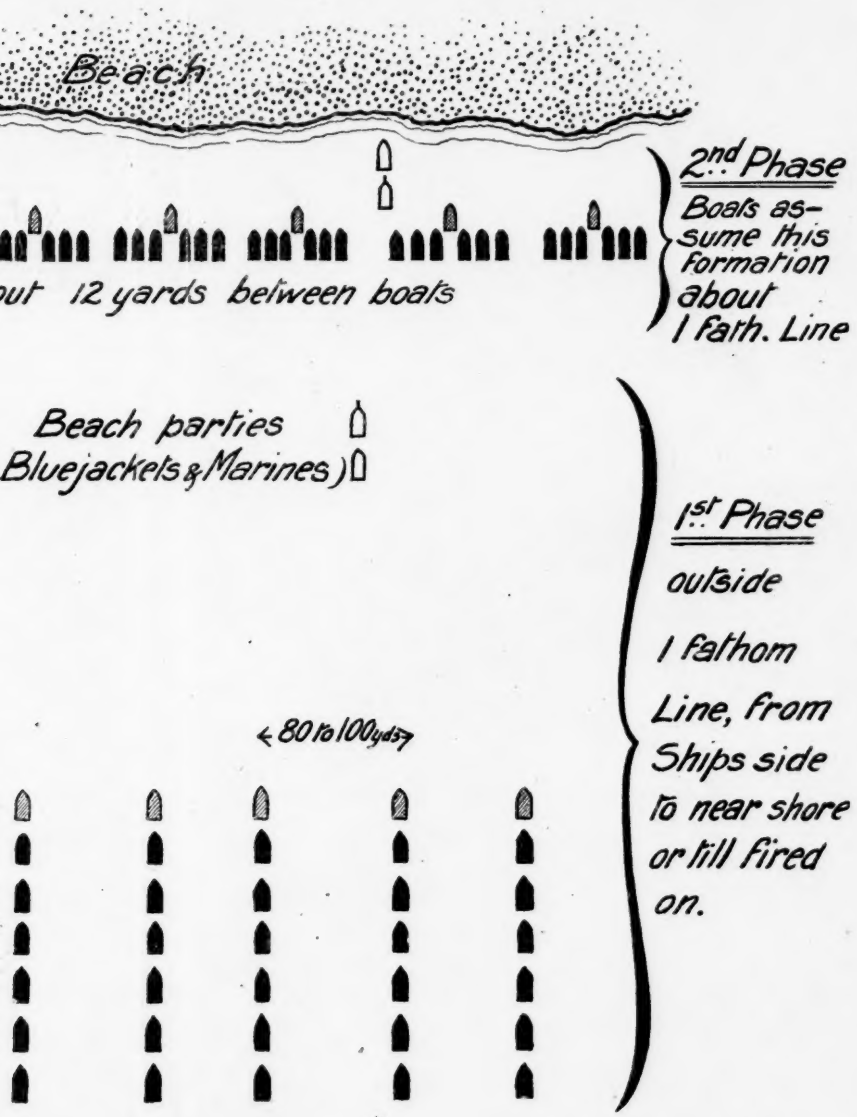




J. J. K. & Co., Limited, London.

APPENDIX II

lan of a boat advance.



2. The 1st Brigade accordingly will land as follows:—

a. The covering party (three companies from each battalion of the brigade, under Colonel Jones) will embark in six boats from each infantry transport, on signal from the flag-ship, troops to be ready half an hour before dawn.

b. The covering party will move to shore under orders of Commander Brown, R.N., in charge of the flotilla, and secure a lodgment at once.

c. The remainder will embark in succession as boats come for them and proceed to the shore; the second lot of boats not approaching within half a mile of the shore till the covering party is observed to be unmolested.

And so forth, according to the number of troops to be exercised, with orders *re* rations and ammunition, etc., as detailed in Part II., Section 2.

FIGHTING IN ENCLOSED COUNTRY

WITH SOME

NOTES FROM THE ESSEX MANŒUVRES.[1]

By Brevet Colonel G. H. OVENS, C.B., h.p.,
Late Commanding 1st Battalion the Border Regiment.

Tuesday, 31st January, 1905.

Colonel Sir H. S. RAWLINSON, Bart., C.B., *p.s.c.*, in the Chair.

Motto.

"The simple principle that, in days when speed is essential, and the effects of disaster incalculable, forethought, systematic preparation, and scientific study of war are essential to National security."

INTRODUCTION.

THE headings I propose to take in this lecture are as follows:—

I. Urgency of Subject.
II. The physical features of enclosed country and their immediate effects.
III. Consequent modification of tactical rules.
IV. Evidences from former wars.
V. Summary and general deductions.
VI. Our requirements.
VII. Appreciation and conclusion.

[Please note that "Enclosed" country does not mean "Close" country, which refers more particularly to woods, jungle, etc.]

I.—URGENCY OF THE SUBJECT.

People may ask: "Why discuss fighting in enclosed country at all? We are not likely to have any use for that kind of fighting." At the first glance this may seem a natural objection to make, but it is one which is easily refuted on the following grounds:—

Economy.—At certain seasons of the year enclosed areas can be made available in return for small compensation. Waste lands are rare in England, and transporting troops to them is expensive. Also the opinion is happily gaining ground that field training by units or sub-units on ground near their quarters is more useful just now than manœuvres by large bodies of troops. It is evident at least that

[1] For further information on this subject, students should consult the Gold Medal Prize Essay of 1881:—"Military operations in the United Kingdom considered, particularly as influenced by the enclosed nature of the country." By Captain J. K. Trotter, R.A. Vol. XXV. of JOURNAL of the R.U.S.I.

to obtain the full benefit from Army manœuvres previous practice by companies, squadrons, battalions, and brigades is essential.

Profit.—The characteristics of East Essex and Salisbury Plain are as different as chalk from cheese.

Now that the Boer War is over we are not likely to fight on ground like Salisbury Plain, and it is to be hoped that we shall not have to meet an enemy in Essex, but a large dose of Salisbury Plain might act as a useful alterative after a course of enclosed country training. Troops skilled in both kinds of tactics would be well prepared for most theatres of war.

In enclosed country the isolation of small parties affords most valuable opportunities for developing individuality, self-reliance, and co-operation. There are many able soldiers who advocate the use of enclosed country.

Use at Home.—We cannot pick and choose ground for training. It is too often impossible to get any at all.

If enclosed country is not made use of for instruction many of our Regulars will be dependent on injurious barrack-square training, and Volunteers will get no field-work at all.

Manœuvres were held in enclosed country in 1903 and 1904, and will probably take place in such country again. The examinations, on which many careers now depend, may be held there too.

It appears from reports obtained by me from regimental officers that the rank and file as well as senior officers certainly gained instruction in the Essex Manœuvres.

An experienced company commander writes:—

> "The non-commissioned officer learns a good deal and gets confidence in himself as a section leader; he studies his map, and learns his way about the country, and certainly the seniors follow with interest the operations.
>
> "The company officer benefits greatly, especially in map reading, studying the country, making dispositions for attack and defence, and outpost sections."

A regimental lieut.-colonel writes:—

> "A great deal was learnt by companies and the battalion."

We want studies and exercises in tactics for the Auxiliary Forces and those Regulars who are to be ready to fight at home.

We may have to *fight abroad* in some part of the world in enclosed country. Chanzy's campaign about Orleans and the Loire was in enclosed country. North Italy is much enclosed. Fields and fences played a part in the Confederate War, and we ourselves have fought through enclosures in many places, such as Lucknow, Pekin, and Kandahar.

But there is a far more cogent argument than the above. Surely by this time we have abandoned the ostrich-like plan of shutting our eyes and ears to the possibility of an *invasion* of England? Great events move with accelerating rapidity in this twentieth century, and unexpected developments are the rule.

What a storm of complacent satire would have been poured on the man who had ventured to suggest twenty years ago that Japan might in 1904 meet and defeat the naval and military forces of the dreaded Russian Empire. Coalitions cannot be all foreseen; the balance of power may be upset without warning. In an able article in this month's *National Review* several high authorities are quoted

as officially confirming Lieutenant Dewar's contention that England has not sufficient naval resources to make sure of success if two of the great naval Powers combine against us.

In these days inventions quickly succeed and surpass each other. Ships and guns become obsolete. A new discovery in submarines or even motor balloons might suddenly put our ironclads at a discount.

Mr. Arnold-Forster, speaking at Newcastle on 12th December, said: "[the Regular Army is] in the second place for defending our shores." Later, he remarked: "We must prepare ourselves for the emergency [of an enemy landing in our country]."

The Chief of our General Staff stated at Leicester that however efficient the Navy might be it could not guard against all invasion.

In case of war we should not want to keep the Navy tied to our shore—a kind of passive defence.

A foolish idea calmly put forward after the South African War was to the effect that all that was necessary to repel an enemy landed on our shores was to give every civilian a rifle and let him stand behind a tree and "pot" the rash invader. If the Essex manœuvres made one thing more clear than another it was that for fighting in enclosed country troops require very high training, and that we know little about it—it is an unexplored art.

With regard to bush fighting, in his "Ashanti Expedition" Lord Wolseley writes:—

"The best officers and the most highly disciplined troops are alone capable of bringing this war to a speedy and successful issue."

"A terrible lesson awaits the nation whose soldiers find themselves opposed to equally brave but better trained opponents on the field of battle."

The Germans owed their wonderful success against France to their having studied the details of all kinds of warfare which could possibly come in useful. The history of the war relates how, in the Orleans campaign, Chanzy hoped to delay the enemy by holding the banks and enclosures, but here the higher training of the Germans came in. They penetrated the opposing lines in various places, and large parties of the French were cut off.

We see how the Japanese have succeeded through their energy and perseverence in studying every variety of military science and learning.

Let *us* not neglect these lessons.

Past Ministries have been accused of having no settled policy or plans of actions ready for the national defence in case of certain events taking place.

The Navy has lately deemed it necessary to take no hesitating steps in this matter. Let not us of the Army incur the risk of being accused of neglecting our share of the national responsibility.

If, then, invasion has to be guarded against, it must be admitted that our subject is one of vital importance. What are the first steps we can take in the matter?

The subject has apparently been ignored in the past; I can find no text-book or chapter of a text-book which lays down even first principles, but I have learnt a little about the subject under the following circumstances:—I commanded an infantry battalion in the manœuvres of 1903, and as Chief Staff Officer of Umpires of the Red

Force in the Essex Manœuvres I had to superintend the preparation of the daily narrative and criticisms, to move constantly about the area of operations, and to boil down the reports of the umpires. I also obtained at the end very valuable notes from a number of regimental officers. Since then I have studied what history there is on the subject; I therefore venture to put forward what I have gathered in the form of various elementary modifications (or, rather, adaptations) of the principles of tactics with reference to enclosed country. Many of my ideas may be amended or altogether discarded, but some may act as foundation stones for the early erection of a more permanent fabric. At least they may pave the way to discussion.

Since I wrote my report on the manœuvres, Captain Donaldson, R.F.A., has contributed to the JOURNAL of this Institution an able paper on a similar subject, but from rather a different point of view.

II.—THE PHYSICAL FEATURES OF ENCLOSED COUNTRY AND THEIR IMMEDIATE EFFECTS ON TACTICS.

Most of my remarks will refer more particularly to the Essex Manœuvres as being a marked example of the features, or want of features, specially signified by the words "Enclosed Country."

East Essex is flat. Its fields average some 200 yards square, and are enclosed by banks from 2 feet 6 inches high with 4 feet to 5 feet hedges on the top, and a ditch on one side. The hedges were in full leaf in September.

1. It was *impossible to see* to any distance, or to know what was going on within 150 yards all round.

A commanding officer moving with his battalion told me that he suddenly found it was gone. He took several minutes to find it again, although it had never been more than 200 yards away from him in another field. Numerous instances could be added.

2. Heads of columns, patrols, and orderlies were constantly losing their way.

Another commanding officer said that his whole attention had to be given to seeing that the right direction was maintained.

In this kind of country there is obviously little reason to fear that undue interference by seniors, which has been so much talked of, but which is, in my experience, greatly exaggerated or misrepresented. Control is often welcome assistance.

3. *Surprise* was the rule. Patrols, columns, and even guns and baggage suddenly blundered against the point-blank fire of entrenched infantry and machine guns.

On 12th September the head of the main body of the VIth Brigade was fired upon at 300 yards range from an entrenched position.

At Great Bentley, on the 12th September, the VIth Brigade, while crossing the railway bridge in column of route, came under machine gun fire from the Argyll and Sutherland Highlanders at 750 yards range.

A commanding officer, with his second-in-command, adjutant, and bugler, etc., was taken prisoner almost in the midst of his battalion by a small patrol of hussars.

4. *Marked features*, commanding-points, and possible positions were remarkable by their absence. There was nothing to guide the

commander of a picquet, a rear guard, or a flank guard in selecting a position, yet rapid decision was constantly required, as it was a land of surprises and ambushes.

5. *Roads* become all-important factors, since cavalry, guns, and ammunition columns, as well as transport, are confined to them, and all but small forces of infantry are dependent on them. The distribution or detailing of these to separate routes becomes a vital question, and staff officers are wanted for each main road. Calculations of time and space are of vital importance, and junctions of main roads become leading tactical points.

Roads and lanes become defiles in which 1,000 may well be stopped by 3, while none of the 1,000 can tell whether those stopping them are 3 or 300. "Bluffing" fire here has its greatest opportunities.

6. *Railways* were not made use of, but it is evident that they would require a very excessive number of troops for their protection.

III.—Consequent Modification of Tactical Rules.

We now come to the more definite tactical details of the fighting. To make these more digestible I have strung them on sticks after the manner of the Indian kabobs. I hope they may prove more palatable. The first stick I have selected is the sequence of successive questions which would present themselves to the commander of a force advancing to *attack*.

A.—Reconnaissance.

How are its principles modified in enclosed country? So many difficulties hinder effectual reconnaissance that it has been suggested that the best plan would be to select an objective by the map and go straight for it without any reconnaissance. This may save time, but the attacking force is very liable to strike the air only and become lost or cut off by the defender.

Balloons.—Little information can be obtained from *balloons* in close country. The present day long-range guns can keep them at a distance, and they also require considerable escorts, but, as they afford a wider view than anything else does, they should be multiplied rather than reduced, and constantly practised with. Our balloon was stalked and disabled.

Cavalry patrols, being confined to roads, are very liable to be cut off, ambushed, or at least effectually blocked by the enemy, and they can see little.

Cyclists can obtain considerably more information than cavalry, being less easily seen and heard, and being able to travel faster and further round an enemy's flanks. Individual cyclist officers obtained much of the information gained during the Essex Manœuvres.

Infantry scouting is the only reconnaissance that can succeed when the enemy is near at hand, but it badly wants developing. Infantry scouts should take advantage of ditches, and creep up to banks to see if they are occupied. In this work they take the place of the mounted scouts who rode up to the kopjes in South Africa. The service is a most dangerous one, and requires selected men and a regular course of training.

The Germans have long employed infantry scouts, also the Russians, under the name of "Foot Cossacks"; we ourselves have proved their value over and over again on the Indian Frontier.

Reconnaissance in force or by strong patrols was recommended by Captain Donaldson in his recent paper. It may well be resorted to where certain information is essential and other means of obtaining it fail.

"*Personal Reconnaissance.*"—Generals commanding may climb church towers, haystacks, and trees, or even the new self-raising fire escape ladders, though the former are preferable. On the level they cannot see anything and run grave risks in attempting it. It would be improper in us to credit the story of a sergeant on patrol whose hand only just failed to grasp the bridle of a field-marshal commanding an hostile army corps in 1903, because the sergeant did not realise what a noted cross-country rider could do in an emergency, and only an irreverent "Sub." would believe that three general officers had been given "hands up" by a corporal's patrol on 7th September last. However that may be, there were several occasions during the manœuvres when general officers could very easily have been shot while reconnoitring.

There is yet *another method* of ascertaining an enemy's position.

On 12th September, General Wynne, pursuing the Blue invading force towards Clacton, despatched his columns eastwards on three parallel roads. All their advance guards eventually struck the enemy's position, and, with the cavalry on a fourth road, obtained contact all along the six miles of his line. While these columns acted as a containing force they sent back information from which General Wynne was able to decide on his point of assault. At the same time, the want of an objective caused loss of direction and confidence among the columns.

I must add that this passing back of information is a very weak point in the Service.

B.—Orders and Co-operation.

Having made his appreciation of the situation and arrived at a decision, with or without full information about the enemy, the General Officer Commanding next has to give out *orders*. These should make the objective and compass bearing clear, and should, if possible, give a dividing line (such as a road or stream) to guide the flanks of adjacent columns. The omission of either of these causes redoubles confusion in a terrain where you cannot see even the columns next to you.

There is a special reason why orders should be very full and clear. A commander loses all control and even communication very early in action, and commanders of units and sub-units, in seizing the opportunity for exercising initiative and individuality, are apt to lose sight of that *co-operation* which is so essential to success.

Individuality is more valuable than ever in close country where each sub-commander constantly has to think and decide for himself; but unless the commander's general plan is kept steadily in view, individuality may practically amount to insubordination.

I believe the remarkable combination of individuality with co-operation shown us in some of the Boers' operations was due to their all having been made thoroughly acquainted beforehand with each of the steps by which the common object was to be attained.

C.—Protection.

The *Advance Guard* must be unusually strong in infantry because: *a.* More men are required to search out close country. *b.* There are none of the commanding points to economise men. *c.* Numerous connecting files are necessary. *d.* When cross-roads are reached the advance guard should be strong enough to detach parties down them to watch until the column has passed in safety. (This last is not necessary where flank guards can move along parallel roads.)

Advance guards require their local reserves very near the firing line to be at hand to repel an enemy who has got close up unseen.

The advance guards may move near to the main body, as they have not got to keep the enemy's guns out of range.

These two remarks apply to all protective formations.

D.—Attack.

With regard to the advance to the attack of the main body, a course commonly adopted would be as follows:—Columns would advance by parallel routes and obtain contact along the enemy's front until the local reserves could effect penetration at some weak point. Mobile reserves would drive this assault home, while local reserves repelled counter-attacks. One commanding officer says of the infantry:—"Probably a good way to advance would be as far as possible in lines of *groups*, ½ sections or sections in file, each leader choosing his place for getting through the hedge in front and keeping scouts ahead to examine the fence on the far side of each field before that field is entered."

This resembles the group system used by the Japanese and long advocated by many of our own authorities. Caldwell, in his chapter on bush warfare, says:—"It has been found that working by sections or even smaller groups is the most satisfactory arrangement." Lord Wolseley approves this method.

The Japanese have "1st class privates" answering to our group leaders.

In enclosed country more officers are wanted, troops being cut up into small parties.

Lord Wolseley, in writing of the bush country in the Ashanti War, says:—

> "We required a very large proportion of officers, as the space over which our officers can exercise any useful influence there is very small."
>
> "Without plenty of officers the men, both British and native, soon got out of hand."

Infantry are not exposed to long-range artillery fire from the enemy, but they are also, as a rule, unable to reckon on support from guns.

Cavalry, like mounted infantry, will, I think, be chiefly confined to dismounted action, such especially as rapidly strengthening the attack on weak points and checking counter-attacks. It was cyclists and Yeomanry who got in on the right of Blue's position on 12th September.

A large proportion of mounted men should be kept in hand for these purposes.

Shock action is practically out of the question, though a charge or two was successful in the American War.

Schemes for concentration of cavalry require to be carefully worked out and arranged beforehand.

Cyclists, however, are undoubtedly more suited for enclosed country work, and even the cavalry commanders admitted this in Essex. In fact, cyclists were shown to be as useful in such country as mounted troops were in South Africa, and I believe that a few hundred cyclists supported by armoured motors and machine guns, and with motor cyclists to convey orders and information, would successfully oppose many times their own number of other troops.

Artillery is a large and important question, and might well form the subject of another paper and discussion here. Guns labour under the following great disadvantages in enclosed country:—

a. They cannot make use of their longer range, but must always come into action within effective rifle-fire of their target.

b. The dangerous zone and general effect of their projectiles is halved.

c. Being confined to the roads it is extremely difficult for them and their wagons and ammunition columns to get about and avoid blocks.

d. They require large escorts, and are in constant danger of being surprised.

e. They are somewhat at the mercy of pom-poms and machine guns, which can get near them under cover.

f. It is extremely difficult for them to find positions at all for supporting infantry.

g. Their fire cannot generally be observed.

h. There is no room to mass them, and co-operation is too difficult.

These considerations almost, if not quite, cancel their usefulness; but happily here we can remember that such flat, featureless, and completely enclosed country as Essex is the exception even in England.

General French reports (of the Essex Manœuvres):—"The absence of artillery positions . . . . gave very little scope for this arm . . . . The only possible tactics appeared to require that batteries should be attached to infantry brigades, and should trust to local co-operation whenever it might be found possible."

The report of the Senior Umpire with Red Force says:—"Artillery could find no target or position as a rule, and were of little use." One able and experienced R.A. Umpire wrote:—"I do not think the support rendered by the Red artillery was sufficient to justify their presence with the force." Another reports:—"In 4 days of hostilities the artillery have at last come into action, and then only for a brief interval at very fleeting targets."

Considerations *c*, *f*, and *h*, above, make for dispersion and also favour 4-gun batteries.

Another artillery umpire reported:—"Wide fronts and dispersion should be the rule."

The official German report on the Franco-German War says of the campaign in enclosed country near the Loire: — "The latter

(artillery) could seldom be counted by batteries—mostly only by divisions (sections) or single guns."

It would appear advisable to keep a large proportion of the guns in reserve until the enemy's position or some definite target is located.

Howitzers or mortars might be found to be preferable to guns, and *Pom-Poms* may partially take their place; but *machine guns* are certainly invaluable, and a number might well be substituted for a portion of the artillery.

A commanding officer says:—"They could be brought up close to the target under cover, and withdrawn with equal ease; most useful to repel counter-attacks, to stop a rush along a road, or to cover the advance." They are also invaluable in defence for enfilading a lane, etc., or commanding a gap or gateway. The men who got in on the flank of Blue Force on 12th September were only exposed to fire at one point—a gateway; machine gun fire on this gate would have been invaluable. They are much relieved by being comparatively safe from artillery fire.

In the Loire campaign the German account says the mitrailleuses were in their element. Dr. Miller Maguire quoted this from this platform recently. The machine guns appear to have been great factors for success in the Russo-Japanese War.

Some form of hand howitzer or mortar for throwing high explosives short distances might be of great assistance in attacking a position.

[I should here repeat that the above and many of my other remarks are only of the nature of suggestions which might be further discussed or lectured on by experts.]

E.—Lateral Communication and the Circulation of Information are most important points, requiring special attention in enclosed country. One commanding officer says:—"All hinges round the word *information*." *Signalling* and *semaphore* being much hampered, the telegraph and telephone are most invaluable. Still more so are cyclist and *motor cyclist* orderlies. Several cyclists are required with every unit, and also with advanced, rear and flank guards, baggage, ammunition columns, etc., etc. *Signallers* should be mounted on cycles. Both G.O.C. Red Force and O.C. Cavalry informed me that motor cycles were absolutely invaluable in Essex for conveying information and orders for G.O.C.'s and cavalry commanders.

One O.C. says:—"Two bicycles should be attached to each company where good roads exist." Everyone commended their use.

Sub-units coming into collision with the enemy constantly failed to send word both to their commander and to their neighbours, as the following extracts from umpires' reports will show:—

> "This was noticeably the case on the 12th September, when a body of cyclists and Red cavalry turned the right flank of the Blue defences near Beaumont Quarry, and neglected to inform Colonel Allenby of their success."
>
> "Owing to our always having worked in very open country, *e.g.*, Aldershot and Salisbury, it was difficult to get commanding officers to realise that after they had passed the first hedge the brigadiers could practically know nothing of how things were going on except by reports."

"On one occasion the brigadier was receiving information as to the enemy's movements near Witham from the headquarters of the Red Force at Braintree, instead of from the battalion of his brigade, which was at Witham, and which was much nearer to him."

We will now transfer our attention to another stick of kabobs, viz., the considerations occupying the mind of the commander of the defence; but before doing so I propose to insert here the advantages and disadvantages of the attack and defence.

F.—Advantages and Disadvantages of the Attack and Defence.

The Attack.

Disadvantages.

The more obvious ones are as follows:—

a. Difficulties in reconnaissance.

b. Liability to surprise and confusion.

c. Difficulty in communication, control, and co-operation.

Advantages.

d. Good approaches under cover up to all parts of the enemy's position.

e. Cover for checking counter-attacks and for "containing" operations.

The Defence.

Disadvantages.

f. No strong positions or natural features for flanks to rest in.

g. Difficulty of ascertaining enemy's movements and intentions.

h. No command of view or fire.

Advantages.

l. Good cover from fire and view.

m. Opportunities for false fronts and flanks, "bluffing," and ambushes.

n. Supports and local reserves can be kept close up, and a counter-attack issue unexpectedly from any point.

o. Existing obstacles can easily be made very effective.

For the sake of additional emphasis I have shown the above factors, both under Attack and Defence, though some are practically repetitions of others.

Of these (*d*) and (*h*) are perhaps the most important, and on the whole the advantage may be said to lie with the attack.

Many minor points will no doubt suggest themselves to you here. Two which I have not mentioned above are that (*p*) attacking guns have a more defined and stationary target, and (*q*) an attack is always likely to be disconnected and spasmodic.

G.—Positions.

Considerations Affecting the Defence.

In selecting his *position*, the commander of a force on the Defensive misses those natural features which so greatly assist him in other countries. The lie of the roads, both lateral and perpendicular to the front, gives some general indication; but repeated practice in enclosed country is the only thing which can enable him to decide quickly and confidently.

H.—Outposts.

While as in the Attack, the commander is not likely to learn much from Reconnaissance, something of the enemy's plan is bound to be revealed by the driving in of the *outposts*. The outpost line must be far thicker than in open country, with reserves closed well up. On the other hand, the perimeter need not be so far out as usual—a great saving in men.

J.—False Flanks and Ambushes.

A good deal of ready-made cover is afforded by the banks and ditches. This gives opportunities for false flanks, advance posts, and ambushes.

K.—Mobile Reserves.

Local Reserves must be numerous, and should be posted close up, so as to be able to repel any sudden successes of the enemy, especially on the flanks.

A large proportion of the mounted troops with cavalry—machine guns must be kept in hand near cross-roads for the same purpose. A local reserve on Blue's right, near Beaumont Quarry, would have saved his flank on the 12th. Large reserves arrived about 35 minutes late, and this was probably because Red attacked along his whole front, and he could not tell till the last moment at which point reinforcements would be required.

L.—Guns.

Guns must be concealed and dispersed, many alternative positions being prepared. You will have noticed the great results obtained at Ta-Shih-Chiao on the 24th July, when the Russians first masked their batteries successfully: 3 Russian kept 12 Japanese batteries in play all day, and were reported to be 100 guns. — (*Times* Correspondent.)

M.—Defensive Works.

Concealment of the exact position is generally so important that banks parallel or oblique to the line cannot be levelled, though acting as saps for the enemy's approach. The far sides of them can, however, be mined, and gaps may be cut like gateways with machine guns trained upon them. The *R.E.* should also see that barbed wire and wire charged with electricity is woven into hedges and gateways, and that roads are blocked with abattis, etc. Hand grenades should be

given out, and a few shields provided for men holding important exposed points.

N.—Communications.

Arrangements for signalling and telephone communication are most important, and also gaps must be cut for the passage of mounted infantry, machine guns, etc., to reinforce threatened points and for retirement across country.

O.—Retirements and Delaying Action.

Retirements would appear easy in enclosed country owing to the amount of cover from view and fire; but, on the other hand, the enemy's flanking movements are similarly concealed. Confusion will probably be the rule in retreat with all but the most highly-trained troops, on account of congestion of traffic, and difficulty of finding the way.

As in the case of advance and flank guards, there are no strong successive positions for a rear guard to take up.

At the same time, a determined commander who knew the country could bluff and mislead a pursuing force and cause it much delay.

Knowledge of the localities would evidently be invaluable here, hence the special value of Yeomanry and Volunteers.

P.—Night Attacks.

In the manœuvres the invading force was remarkably successful in a night attack; but the invaders were helped by circumstances which would hardly obtain in war. The method was, I believe, to obtain contact with the defenders on a road and immediately move round their flanks through the fields, and this was excellently carried out. I have barely touched on the subject, as it is a doubtful point whether night operations would be feasible in enclosed country, except to occupy strategic rather than tactical points.

Q.—Other Operations.

I have no time to consider wood and village fighting, convoys, marches, etc., as well as many other points, such as the alterations in certain paras. in the Drill Books, including those relating to frontage, depth, and ranges.

IV.—Evidences from Former Wars.—Extracts from Translation of Official German Account of the Franco-German War: Chanzy's Campaign on the Loire.

> "Owing to the extensive sub-division of the land customary in this country, every property is surrounded by hedges, ditches, and walls. . . . Although the superior effect of the *Chassepots* here ceased to avail, the mitrailleuses were in their true element, and became a dangerous weapon. Even the commanding points seldom offer a free view to the assailant. He must abandon all idea of any planned deployment of large bodies, especially of cavalry and artillery. In the actions before Le Mans.

the latter could seldom be counted by batteries, mostly only by sections or single guns. The action of the cavalry was limited to the roads, and the infantry had almost exclusively to bear the burden of the struggle.

"It follows that in such country the control by the higher commanders is rendered very difficult, and that independent initiative must be demanded of every leader.

"Off the roads even infantry could only move with great difficulty, and at a slow pace, so that any turning movement became impossible."

"In consequence of the peculiarity of the district through which the Army was moving, and owing to the shortness of the days, deep columns could not deploy. The necessity became apparent of advancing in several separate detachments on a broad front, although this would not fail to lead to comparatively weak forces being at all points brought into collision with the enemy."

FROM GENERAL VAN HEINLITH'S BOOK.

(Orleans) "High hedges line the lateral roads; all view is obstructed, and neither R.A. nor cavalry can be employed; defending infantry find innumerable places of support and cover, where they can keep renewing their resistance, the aggressor being all the while unable to estimate the strength of his enemy. The contest resolves itself into a series of disconnected combats withdrawn from all control of the commanding officer."

Since writing this paper I have received the official report of the Essex Manœuvres, and add the following extracts as specially instructive:—

FROM REMARKS BY THE DIRECTOR OF MANŒUVRES ON THE OPERATIONS.

"It was clear from the experience gained that the opportunities of using artillery in a highly enclosed country, such as Essex, must be but few and far between, and that the long range of modern guns would be discounted by the impossibility of getting a target at anything but what for artillery would be a very short range."

"The range and stopping power of modern weapons are largely discounted when the physical features of a close country enable the attackers to advance almost unseen to within a few hundred yards of the defenders' position, while the difficulty of ascertaining the true direction of the attack and its progress makes it very difficult to decide as to the opportune moment and direction of the counter-stroke."

"Another marked feature of the recent manœuvres was the extreme difficulty of maintaining cohesion and direction in the fight. Direction was easily lost, and units were ignorant of what was going on in their immediate neighbourhood. The need of communicating and connecting posts was seriously felt. Cyclists are well suited

for this purpose, but in their absence mounted troops will have to be employed.

"On the whole, the nature of the fighting calls for the highest discipline and training on the part of the defending troops. It is a widely-held opinion that the intricacies of close country will enable imperfectly trained troops to offer lengthy opposition to an advancing force. This opinion is not corroborated by our recent experiences in Essex, where the need for highly-trained officers, a well organised system of command and communication and good discipline was convincingly proved."

EXTRACTS FROM REPORT OF UMPIRE-IN-CHIEF.

"The selection of the county of Essex as the manœuvre area was not without its advantages; it afforded an entirely new experience to all arms and ranks. The troops for the most part were confined to roads and lanes. Cavalry operations were difficult, artillery positions generally absent, and the movements of troops were much hampered by the extent of the 'out of bounds' area."

EXTRACTS FROM REPORT OF SENIOR UMPIRE, BLUE FORCE.

"The leading of infantry in the very enclosed country operated over presented great difficulties, and was new to most of the officers engaged. Without the utmost care the attack in closed country becomes spasmodic and without any cohesion, and is beaten in detail, as the defender can run from one field to another wherever danger threatens."

"I have no doubt that the diminution of the strength of artillery attached to each division of the Blue Force was due to financial reasons, but for tactical reasons also I consider it was perfectly justifiable, as in such closed country the amount of support which can be given to the infantry by the artillery is small, and long columns of guns only tend to block the roads."

"In an enclosed country such as Essex, the first steps in entrenchment (so called) before any digging is begun should be to make gaps in the hedges to get intercommunication between companies, and the next should be to cut down the quick-set hedges to obtain a free field of fire."

EXTRACTS FROM REPORT OF THE GENERAL OFFICER COMMANDING RED FORCE.

"*Cycles.*—These should not be fewer than 20 for each regiment of cavalry and battalion of infantry.

"Motor cyclists were of great use when efficient, but six only were supplied to the Red Force, and there were several breakdowns, in consequence of which I was without communication with the cavalry brigade on the night 7th-8th September, the occasion of all others when communication was so important."

V.—Summary and General Deductions.

The great advantage of training in enclosed country for practice at home and use abroad makes our subject an important one; but the possibility of Invasion makes it absolutely imperative.

High Qualities and experience in commanders, and thorough training and discipline in the rank and file are more than ever requisite to success.

The characteristics of Enclosed country make necessary a fresh consideration and *adaptation of the principle of tactics.*

Reconnaissance has many difficulties to contend with, but its advantages are so great that, instead of slurring it over, more means should be used to make it effectual. Of these, cyclists come first.

Orders should be very complete, and initiative must always be subordinated to co-operation with the plans of the commander.

Advance guards and all protective formations must be strong in infantry, with numerous local reserves close up.

In attack, infantry should work by groups, and cannot depend on artillery support. *Cavalry* will fight dismounted, and, with machine guns, will be especially valuable for quickly reinforcing successful attacks or repelling counter-attacks.

Cyclists will make raids and do the usual cavalry work.

Guns lose much of their great importance, and should generally remain in reserve, pom-poms, and machine guns being substituted for part of them.

Machine guns are invaluable for enfilade, checking a rush, worrying guns, etc.

Means of *communication* must be multiplied, and a special system devised. *Cyclists* and motor cyclists are *essential. Passing information* requires more practice during peace time. In defence, false flanks, ambushes, and advanced posts are valuable factors, as also is *concealment. Mounted reserves* should be kept in hand. Gaps must be cut. Men must be specially trained in this and in cutting loopholes and making abattis.

Owing to troops being confined to the roads, the movements of large forces is attended with much difficulty, especially in cross-country operations, such as turning an enemy's flank.

Enclosed country suits guerilla warfare.

Manœuvres depending on correct co-operation and communication, such as convergent attacks from distant places, should be avoided.

General Deductions.

Enclosed country is more suited for attack than defence; but it favours delaying action.

Knowledge of the country is especially useful. Movements are necessarily slow, and timing is difficult.

Many roads should be used in an advance for convenience, and safety of both manœuvre and transport.

VI.—Our Requirements.

1. A school or course for regimental scout instructors, and the general development of infantry scouting and moving across close country.

2. Further practice in visual training and reading country. (Some men and even officers are quite unable to observe an enemy well within their view.)
3. A definite improved system for lateral communication.
4. Organisation of trained cyclists, and other orderlies, under an Intelligence officer. Also guides.
5. Practice of rapid or snap-shooting at short range. (A man's head bobbing up over the next bank is the usual target in enclosed country.)
6. A chapter of a text-book dealing with the principles of fighting in enclosed country like England.
7. The acquisition, through the Manœuvre Act or otherwise, of the use, during certain seasons, of areas of enclosed country near all military stations for training.
8. Field firing to be carried out in enclosed country, and also experiments as to penetration of bullets and shells, dangerous zones, etc.

An artillery officer whose opinion carries weight reported at the close of the manœuvres:—

> "Probably one year's actual gun practice in similar country would lead to the discovery of a useful method of employment of Artillery in situations such as occurred."

We want more trained scouts, more cyclists, more motor cyclists, more officers, both Staff and Regimental.

Equipment.—We see that the Japanese have profited as remarkably by their use of modern inventions as they have also suffered by their guns being outclassed by the Russians.

In some of their infantry corps every man has a field glass. We want these, and in enclosed country we want many such things as shields, hand grenades, bamboo mortars, and hand howitzers.

Automatic rifles would be valuable for commanding a lane or gateway. They are said to fire as rapidly as a machine gun. The "Hallé" only weighs 11 lbs.

Kookries or small axes are required for cutting through hedges and through barbed wire and making loopholes and abattis.

"Observation ladders" as made in Germany would sometimes be most useful.

The time may not have yet arrived to pay much attention to motor balloons, but we certainly ought to make more use of motors.

I found by experience that a staff officer on a motor can obtain and take back to his general in less than one hour a complete report of what is going on along the whole front of a division in action, together with a cavalry brigade and cyclists.

Motors can place troops and guns at a distant threatened point in half the time it can be done by any other method.

The Portuguese have a motor which can convey 4 howiterzs double as far as 50 horses could draw them, and in less time.

Armoured motors, carrying machine guns, automatic rifles, and small ladders for observation, would do the work of the armoured wagons and trains in South Africa, only much more effectually.

They will be invaluable for "cutting out" work, like torpedo-boats. They will effect wide turning movements and reconnaissances, or at least support cyclists in carrying these out. They would be most useful for holding weak points, convoy work, etc., etc.

VII.—Appreciation and Conclusion.

The brilliant and gifted Colonel Henderson, who gave us "Stonewall Jackson" and "Combined Training," whose loss at this crisis in our military evolution was a national disaster, has passed away, but his words live after him. While at the Staff College he steadily advocated the practice of making out Appreciations of the Situation. General Hutchinson, in his report on Army examinations for promotion, put the Appreciation of the Situation at the head of the subjects in which officers are deficient in tactics.

We all think much of a man who has sound judgment and sense, knows what he is about, and "is all there." These are merely other ways of describing one who can appreciate the situation and act accordingly.

We are told in our text-books that the whole aim and object of a soldier's training, his drilling, marching, manœuvring, his discipline and musketry is to enable him to bring bullets or shells to bear on an enemy at the right time and place. That is his *raison d'être.*

In the same way the whole end and object of an officer's or non-commissioned officer's training is that when he comes to the supreme moment of his military life—namely, the command of his unit or sub-unit in immediate contact with an enemy—he may be instantly able to appreciate the situation in all its bearings and act accordingly.

In order to have calmness and confidence at that crisis, he must know what he is about, must be well up in his subject, must have the tactical factors at his fingers' ends so that he acts on them instinctively as on second nature. The great Roger Bacon laid it down that "Knowledge is power." The Germans and the Japanese have acted on this motto. They have studied theory and achieved power. We in the British Army have been far too much inclined to despise and shirk theory, and yet theory is the complement of practice, as any captain of a cricket, football, or polo team would tell us.

General French has officially warned us that our small Army must be so highly trained as to beat an enemy with odds of 3 to 1 against us.

Our opportunities for practice are limited. Let us at any rate master all the theory we can get at, so that when active service comes to the lucky ones we may be all there, and may not be pointed at by irresponsible vote-hunters or yellow Press penny-a-liners as those "stupid" and "ignorant" officers.

I have referred to the *raison d'être* of privates and officers; we may now go a step higher and ask: "What is the end and aim of an Army?" Is it not simply to effectively strike an enemy; above all, to strike him when he climbs over our old white walls?

Let us roughly appreciate this situation.

The General Idea is that we are at war with two of the great naval Powers and that they have landed a force in, let us say, Essex, either to raid or to invade.

Our object is to cut this force off and destroy it. The enemy would be concentrated, and no doubt well placed, and *his forces* strong and well-found. Mr. Arnold-Forster said at Newcastle on 12th December that "we should be fighting against the best organised and best drilled troops in the world."

Our forces are scattered and not homogeneous. Their strength is small and exists partly on paper.

I will pass over most of the *factors* laid down, but you will find on looking over them that they favour the enemy as much as ourselves. I only want to refer to two, and these are "Topography" and "Positions." Surely the mere mention of these is sufficient to make us realise the urgency of our learning the unexplored art of fighting in enclosed country.

One *course open to us* is to shirk the question, and since the days of Ethelred the Unready we have shown a marked tendency to do this, and to learn our lessons only from disasters.

The "other *course*" is to go straight at the subject without more ado. Surely it will provide us with a simple, definite, and practical "line of action."

We may know from their utterances that we shall have the Secretary of State and the Senior Military Member of the Army Council behind us in this, and the Council of the United Service Institution have selected for the subject for the next Gold Medal: "In the event of war with one or more naval Powers, how should the Regular Forces be assisted by the Auxiliary Forces and the People of the Kingdom?"

Let the Regulars make themselves experts in this kind of fighting and develop it to the utmost by practice and study. Let the Auxiliaries get to know their own localities and swell the ranks of machine gun detachments, cyclists' companies, and motor Volunteer corps. The People of the Kingdom who join neither the Regular nor Auxiliary Forces can but provide the ground for practice and pay for other absolutely necessary requirements.

Lord Roberts has recently written his opinion that: "Men of all classes, who for one reason or another do not care to serve in time of peace, must be prepared to undergo such a modicum of training as will make them useful as soldiers when called upon by their country . . . . in time of need."

If John Bull will not give his services as a conscript he must at least pay the bill.

Colonel E. A. ALTHAM, C.B., C.M.G. (late Royal Scots):—I think we must all feel very grateful to the lecturer who has brought this very important subject before us for consideration this afternoon. It is one that has not received sufficient attention, either in theory or in practice, throughout the Service, and yet it is one which seems to me to need our attention as an Army more than any other Service in the world, and that for two reasons: first, because more than any other Army, we, the British Army, have so constantly to meet cunning and skilled foes in a closed country. I suppose very few officers of the Army realise how constant our small wars are in these savage countries; but it may be useful to recall for a moment one or two striking instances where fighting in very difficult bush country has taken place in the last five or six years. Let me call to your mind the Sierra Leone rebellion, where the fighting took place along very narrow bush paths only about 7 feet across, with an impenetrable bush on either side. There was a problem which, I take it, hardly any officer in the Army had ever thought of before: the difficulty of forcing a way through an enemy holding a position across a path of that kind with stockades. Take two other actions, both of them not very satisfactory for our Army, that at Erigo and Gumburru, in the Somaliland campaign. At Erigo we had a long column of Irregular troops, mostly very indifferently disciplined, suddenly attacked in high grass and thick bush by

a mass of Somali savages armed with spears and short-range rifles. At Gumburru, again, we had a small column of disciplined men surrounded and outnumbered by fanatics, and having to stand their ground and fight it out to death. These are only typical examples, it seems to me, of problems and difficulties which the British officer has to face all round the world in defending the Empire. But if we turn to our own country, the United Kingdom, we find that the essence of home defence is fighting in enclosed country, and yet until the last manœuvres in Essex I do not think there was any attempt to practise troops in enclosed country, except possibly the manœuvres held by Sir William Butler at Ashdown Forest some five or six years ago. The lecturer pointed out, I think most usefully, the extraordinary difficulty commanding officers have to face in training their troops in enclosed country. I venture to think that is a matter which requires consideration even more than large manœuvres. It is well known that in large manœuvres it is the general officers and their staffs that benefit most; the greater number of the troops have sometimes, day after day, to march in the rear of a column, and perhaps hardly come into action at all, and see very little, and therefore get very little practical experience. They are there to train the generals and the brigadiers. It is therefore at other times regiments should receive their practical training, and I do think it will be of enormous value to the Services generally if some system could be arrived at which would enable that training to be carried out in enclosed country during the whole year. This applies very forcibly indeed to the Auxiliary Forces. As the lecturer pointed out, unless Auxiliary Forces can train over enclosed country they get no practical training whatever. Now, what is at the bottom of the difficulty that prevents this most excellent practice being carried out? The bottom of the whole difficulty, I take it, is the Trespass Law in this country. That is to say, that the State, although nominally owning certain rights over the property of the whole country, is debarred from training troops over the land, although on the efficiency of those troops the safety of the whole country depends. It does seem to me that that is an illogical position for this country to adopt. It is an accepted doctrine that the interests of the individual must yield to the interests of the community. If the interests of the community required a railway to be made over a certain tract of country the land is taken from the individual. But we go further than that; we actually allow the amusements of the community to over-ride the sacred rights of property, because it is notorious that any Tom, Dick, or Harry who likes to spend two guineas in hiring a horse to follow hounds can ride over any man's land and break down his fences, ride over his crops, and penetrate his covers, and so on. I suppose none of us would like to see that done away, it is an admirable and excellent custom; but it does seem to me a most anomalous state of things that when we allow anybody and everybody to damage our neighbour's land for the sake of amusement, the troops of this country are denied the right of access to that land when the safety of the country depends upon it. It would be such a simple thing to pass a short Act of Parliament abolishing the Law of Trespass, so far as concerns the exercising of troops when on duty, with a saving clause, of course, that whatever actual damage was done by these troops should be made good by the taxpayer. Now let me mention before I sit down, a short instance that I was told the other day, showing how very little that would cost the taxpayer. I believe down at Dover the country at the present moment is paying £700 a year for the right of manœuvring troops over certain farms. The agreement with the tenants of those

farms states that in addition to that £700 a year the troops are to pay for all the actual damage done, for all damage done to fences, crops, and so on. A staff officer told me the other day that last year the addition they had to pay to that £700 rent was the large sum of 10s. Practically, therefore, all that the tenants were out of pocket was 10s., and the country gave them £700 a year for nothing. I do think that is a monstrous state of things, and I do trust that some of our statesmen will look the matter in the face.

Lieut.-Colonel A. W. A. Pollock (late Somersetshire Light Infantry): —After the very eloquent speech to which we have listened from Colonel Altham, the wind is completely taken out of my sails, and I have really nothing left to say. I intended to indulge in a tirade against the British public, who will neither serve themselves nor allow their servants to learn the soldier's trade. Colonel Altham has put the matter so clearly before you that there is nothing left for me to add. However, I would like to say a few words in reference to the lecture and to Colonel Altham's speech. The lecturer has impressed upon us the importance of theory. I do not for a moment wish to contest the importance of theory; but, on the other hand, I think most of you will agree with me that although we have not enough theory, we have no practice at all, and probably the reason why we are wanting in theory is on account of the entire absence of the practical foundation on which to base that theory. A young gentleman is taught how to compare the strategy of von Moltke, of 1866, we will say, with some other example; but on the other hand, if you give him fifty men and ask him to defend a drift he does not know what to do because he has never had any practical experience. I was talking to Mr. Arnold-Forster only last week on the subject of training, and I was able to say to him that in the whole course of my service I only once commanded or served with a company at field training under conditions which permitted anything approaching to reasonably decent training. In that particular case I was at Plymouth, and I happened to have certain advantages owing to being able to get permission to go over private property, and that training was fairly useful. With regard to enclosed country, it has been brought before us by the lecturer and also by Colonel Altham that the importance of learning to work in enclosed country is in order that we may be able some day to meet some desperate invader. I venture to suggest to you that the true reason why we should be allowed to work in enclosed country has no reference to invasion at all. Troops that have been sufficiently well trained to work in enclosed country can be worked easily in any other, because enclosed country being the most difficult and the difficulties having then been mastered, what was previously difficult becomes comparatively easy. The invasion bogey I hope sooner or later will be laid. We ought to be able to understand that once the time comes when either hedge-row riflemen or beautifully drilled Guardsmen are asked to oppose the Pomeranian Grenadier, it would save time to chuck up the sponge. It only means, if you will pardon a "bull," whether we are going to starve after we have been killed or before! I do not see how any resistance in this country can affect the result of the campaign. Mr. Cobden, for example, did not pretend to be a soldier, but he appears to me to have summed up the whole matter in the smallest possible number of words. He wrote:—"If an enemy has command of the sea so as to be able to land a force in this country and keep open his communications, he has thereby shown his power to blockade us, and starve us into subjection." However we improve the training of our troops,

and however we increase our armed forces, it should be entirely with reference to over-sea service. The defence of London is not on the Surrey hills, but somewhere in Europe or Asia, as the case may be. We want to train as well as ever we can, therefore let us get a Manœuvre Act which shall over-ride the selfish rights of the citizen in favour of the interests of the nation; let us have leave to go over everybody's ground and train our soldiers in enclosed country, so that from the lessons they learn under those difficult circumstances they may be able to grapple with the comparatively easy problems presented by open country. The lesson, I suppose, of the Essex manœuvres was not so much what was to be learned by operating in an enclosed country, but the present impossibility of gaining access to any ground at all. I understand in those manœuvres the troops were occasionally allowed to enter a few fields, but generally speaking were confined absolutely to the roads. That is a matter which should occupy the attention of our statesmen (if we have any), so that in the future our soldiers may be trained by practical experience and not only by reading books.

Colonel G. H. Ovens, in reply, said:—I do not think there is very much for me to answer. We have listened with great interest to Colonel Altham's remarks, and I agree it should be driven home how necessary it is for the country to provide us with practice grounds. We cannot be expected to fight without such practice grounds, and the more that is driven home to the public mind the better. Apparently practice ground can be cheaply provided, judging from the extremely small charges for compensation that were paid at Dover. With reference to what Colonel Pollock said, I do not wish to set theory against practice, but I think theory is a useful handmaid or supplement to practice. He declares that no invasion is probable; but that is a very large subject, and has been talked about for hours here on other occasions. At any rate, he puts the other arguments very strongly in saying that we can learn very many lessons from fighting in enclosed country that will be useful abroad. I hope that on some future occasion many of the subjects that have been mentioned will be taken up and a whole lecture devoted to them: artillery, for instance, cavalry, and cyclists. Experts might well enlarge upon these questions, which I have so lightly touched upon, and which I should have hesitated to bring before you at all, knowing so little about them, excepting that nobody else had done so, and one had a few opportunities in Essex and elsewhere of forming an opinion.

The Chairman (Colonel Sir H. S. Rawlinson, Bart., C.B., Commandant of the Staff College):—In connection with the most interesting and lucid lecture we have heard this afternoon I should like to make a few remarks in summing up, more especially in connection with the tactical features and difficulties presented by an enclosed country. I think the great tactical feature of operations in an enclosed country, and one which was specially brought forward in the Essex manœuvres, is the enormous difficulty of mutual support. The lecturer has already shown how impossible it is for columns to keep touch with one another and each to know what the other is doing, in a dead flat country a mass of enclosures 200 yards square. Mutual support between columns which is so vitally important to success must necessarily be impossible in such a country. If the Essex manœuvres have taught us anything, I think they have at least taught us this. Then again, in a country such as Essex, the three arms cannot work in combina-

tion. The infantry could not be supported by the artillery, for there were no artillery positions, and as we have been told by the lecturer, the experience of the cavalry was that they could effect nothing. If we turn to the experience of war we see a general inclination to avoid operations in a very enclosed country, mainly because these operations almost invariably degenerate into isolated combats. The front is broken up, and we find small actions going on over a wide area without any connection or cohesion between them. For this reason any really decisive result will be almost impossible. The local successes will not be confirmed, whereas in a local reverse the defeated troops can withdraw in safety and break off the engagement. Hence in such a country it will, I think, be impossible to confirm the successes, and at the same time easy to avoid defeat. And this brings me to what I think is one of the lessons which we should carry away with us this afternoon, viz., that from actions in enclosed countries it will be almost impossible to obtain definite results, for neither side will be able to gain a decisive success. Still, the local conditions of Essex, where the country is practically dead flat, do not obtain over very large areas; in fact even in these islands, where, as a general rule, the nature of the country is more enclosed than almost any other, we find very few repetitions of Essex. There is almost always some slight undulation which will furnish artillery positions. I have recently had the opportunity of working over a very large extent of country in South and South-Eastern England, and I know of no area which is exactly similar, or of such a wide extent, as the flats of Essex. The enclosed country as a rule extends along the valleys, and those valleys are bordered by more or less lofty hills or undulating areas, giving at once a view and an artillery position. If we have to operate in the neighbourhood of enclosed country I think we should probably elect to do so when on the borders of it. A commander will gain a material advantage by forcing the enemy to pass through an enclosed country, which then partakes of the nature of a defile, whilst he himself remains on the outskirts of it. He will then gain for himself the artillery positions which will be denied to the enemy, and he will be able to make use of the three arms in combination, whereas the enemy will not. This is also the teaching of history. If we look back at past wars we find there is a general reluctance to engage upon extensive operations in enclosed country. The lecturer has already referred to the Orleans campaign. I was fortunate enough last year to visit that terrain, and nothing struck me more than the fact that all the decisive actions in that most instructive neighbourhood took place not in the intricacies of the Orleans forest but in the clearings on the confines of it at Coulmiers, Loigny, Poupry, and Beaugency. All these actions were fought not amongst the vineyards and the woods, but outside them. Von der Tann, when at Orleans in October, 1870, received information that large French forces were coming against him from the north-west. He forthwith marched straight out of Orleans, 20 miles north, and fought in the open. On the 3rd December of the same year, when Prince Frederick Charles was directed to occupy Orleans, so loath was he to plunge into the intricacies of the forest which surrounds that town that it required a strongly-worded order direct from the King to induce him to make that plunge. Having once done so, he found, as we shall always find in enclosed country, that his superior discipline and training, coupled with the war experience of his veteran troops, made it a comparatively easy matter for him to push back the French *gardes mobiles*. And this brings me to what I think is the second lesson that we may learn

from fighting in enclosed country, namely, that in confined areas, whether in forests, towns, or fields, such as Essex, disciplined troops who have been thoroughly trained, have little to fear either from less disciplined troops or a local population armed with rifles. There is an idea amongst Englishmen, to which the lecturer has already referred, and which I think was started at the close of the South African War, to the effect that the armed population of this country could effectively defeat invasion. I think the teaching of history, especially the Orleans campaign and the experience of South Africa, do not support this theory. Armed inhabitants will never be able to successfully oppose trained and disciplined troops. The idea that they will be able to do so is to my mind a pernicious fallacy. Discipline and training are at all times of the highest importance, but in enclosed country they are doubly valuable. In this connection the facilities for the more thorough and universal training both of our Regular and Auxiliary Forces in enclosed country should, I think, be granted on the lines indicated by Colonel Altham and Colonel Pollock. We are very much indebted to them for having raised the question, and I am glad of this opportunity of expressing my entire agreement with them. It is now my pleasing duty to propose a vote of thanks to our lecturer, and in doing so I am sure I am only endorsing the sentiments of everyone present.

Major-General Sir Edward Hutton, K.C.M.G., C.B. :—I have been asked by the Secretary to propose a vote of thanks to our Chairman, Sir Henry Rawlinson; but before actually asking you to accord that vote I would like, as an old friend of the Chairman, to add to the lessons which he has enumerated as to be learnt from the interesting and most suggestive lecture we have just heard, another lesson, viz., that of organisation. I feel sure the Chairman will agree with me—as all thinking soldiers will agree who have had anything to do with raising, organising, and commanding troops in war—that the foundation of sound tactics in the field of battle is sound organisation in times of peace, and it is in this very particular that we at home so lamentably fail. It was interesting to hear the lecturer comment on the Essex manœuvres. It is still more interesting to consider the means that we have at our disposal for opposing a possible invader. We soldiers, whether belonging to the Regular Forces, the Militia, or the Volunteers, must recognise that under existing conditions anything in the shape of a sound system of military defence which will hold its own in face of the disciplined Armies of the Continent does not exist at present in this country. I ask you, gentlemen, by acclamation to pass a vote of thanks to Colonel Sir Henry Rawlinson, the Commandant of the Staff College, for so kindly presiding on the present occasion.

OPTIMISM IN THE GERMAN FIELD ARTILLERY.

By General of Artillery ROHNE.

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OUR experimental authorities have been occupied for fully four years with the question of a Q.F. gun for the field artillery. The guns have been twice tried by the troops—in 1903 and 1904—and were found to be in every respect satisfactory after the first trials. In the interval nearly every European Power has adopted the Q.F. gun for its field artillery. No one can maintain that the experiments with this gun have been hastily carried out in Germany; it is rather the case that the system of barrel-recoil has met with strenuous opponents in Germany who were still eagerly fighting against it two years ago, at a time when it was universally recognised as the gun of the future. The reasons advanced for this operation were so weak that they fill me with amazement and disgust. However, we may turn to the discussion of our subject, for the triumphant introduction of the Q.F. gun into the German field artillery can be only a question of weeks. It follows its introduction into the German garrison artillery, which has been carried out with praiseworthy rapidity and energy.

Contemporary literature shows that a dangerous spirit of optimism is prevalent in many quarters in the field artillery. It delights in maintaining that all our existing equipment is suitable in every respect, and certainly better than that of our neighbours. This is a serious obstacle to progress. It is quite comprehensible that the first reports about the new French field guns should have been received with great mistrust, for performances such as those of the quick-firing gun were in old days considered an unattainable ideal. But this mistrust was not abated after it had been demonstrated with guns made in German factories that it was a fact that the gun did not recoil when fired, and that whole series of shots could be discharged by rapid fire without observing each shot, and without any loss of accuracy. People were not willing to admit that the '96 field gun was out of date, and maintained, with remarkable obstinacy, that it was capable of competing with the French protected batteries with good prospect of success. Our good fortune preserved us from so unequal a contest, and as France has now no Allies who are free to assist her, and as she is in great difficulties with her officers, it may be taken for granted that the re-armament of the German field artillery will be carried out without interruption.

Re-armament, however, is not in itself all. If we wish to reap the full advantages of such a measure we must face the consequences which of necessity follow it. But here we are met again with that same spirit of blind optimism which was evinced in the question of re-armament. Advocates of the *status quo* will not admit that re-armament necessitates far-reaching alterations in organisation, in the principles of the employment of field artillery, and in methods of fire. If they make any comparison, their deductions are always in favour of existing arrangements, and these deductions are often founded upon premisses of very doubtful value.

The most important question affecting organisation is whether batteries should henceforth consist of four or six guns, and whether, in the event of its being decided to reduce the strength of the batteries, the present number of guns should be retained in the army corps, or should also be reduced. The advantages of small batteries are so obvious that no one can gainsay them. Even the experiments conducted by us with the '96 gun "were completely favourable to the reduction of the number of guns in a battery of four."[1] In spite of this, people are not willing to reduce the strength of the battery, even after the introduction of the Q.F. gun, the increased rate of fire of which would still further justify such a measure. The reasons they give are that they are unwilling to reduce the number of guns, and they overlook the fact that guns which cannot be employed owing to want of space or of ammunition are absolutely useless, and that either of these events is more probable with batteries of six guns than with batteries of four. I will not repeat here the reasons which I have often advanced for the reduction of the strength of the battery; I cannot, however, refrain from referring to the questionable means which have been used to combat this reform. In the course of this summer many periodicals (*Militär Wochenblatt*, No. 95, 1904, "Die Frage der Feldartillerie im französischen Heere;" *Jahrbücher für Armee und Marine*, No. 390, p. 295; *Umschau*) reported that the French intended to raise the number of guns in their batteries in war again to six. As these reports have been published without citing any authorities, and as I have been unable to discover any confirmation of them in any French or foreign periodical after the most careful search, I must for the present declare them to be false. The French are much too clever to give up the proved advantages of their small batteries, which alone admit of a sufficient supply of ammunition. Further, in such an event they would have to alter completely their drill book published scarcely a year ago.

The principle laid down in the French drill book, that the artillery should be deployed as early as possible, but that *no more guns should open fire than is necessary for the particular object in view*, has been strenuously opposed. Yet it only states what is obvious, for it is a mistake in any circumstances to use greater means than are necessary to attain the required result. The only doubt there can be is: whether the means prescribed by the drill book are sufficient for the particular purpose. The drill book says (sec. 277) that a battery using time-shrapnel can effectively cover with fire a front of 100 metres at all ranges without traversing (firing 32

[1] *Militär Wochenblatt*, No. X., 1903, "Einiges zur Aufklärung von Rohrrücklauf und Panzer." An article based, according to General v. Hoffbauer, upon official materials.

rounds); and that at ranges of 2,500 metres it can, by traversing, do the same for a front of 200 metres (firing 46 rounds). It further maintains (sec. 616) that no closed body of troops can remain in the open in the space covered by fire without suffering such losses as to destroy its *moral*, and that it will be unable to advance. It is ridiculous to deny this, because no experiments of this kind have been tried in Germany, and it must be accepted that these words have not been included in the French drill book without good cause.

It is shown in the published results of the trials of a Roumanian battery of four Krupp guns that this battery was able to cover effectively with fire a front of 300 metres (firing 43 rounds). (See *Jahrbücher*, 1903, No. 387, "Uber Schiessverfahren bei der Feldartillerie.") The time occupied in firing the number of rounds was so incredibly short that a second battery brought into action against the same target could neither shorten the time nor materially increase the effect. It is a question of arranging for opening effective fire at the earliest possible moment; that is to say, of reducing the time spent on ranging as much as possible. The French trials have shown that when several batteries are ranging at the same time on the same target, the batteries mutually interfere with each other's ranging, and always take longer and make more mistakes[1] than when only one battery is ranging. (See *Revue d'Artillerie*, Part 59, p. 454, "Le règlement du 16 Novembre et les concentrations des feux.") This was never doubted by any intelligent observer.

There are people who believe it is sufficient to bring a large number of guns into action and to open fire with them, whereas it is really a question of bringing a sufficient number of guns against the target in the shortest possible time. It is not "an indisputable proposition that, given equal efficiency on either side, three batteries can silence one battery quicker than one can,"[2] for tactics and algebra have few points in common. The trials conducted in France and elsewhere show that the conditions are so different that there cannot be equal efficiency on both sides, but that the single battery is more efficient than the three batteries.

According to the French drill book, the batteries brought into position should never remain inactive, but should employ the time at their disposal in making preparations for opening fire (determining the angle to the centre of the area allotted to the battery, ascertaining the range, if necessary by ranging, etc.). The author of the article in question pretends "that it is absolutely unnatural for a soldier to remain inactive while his comrades are hotly engaged close by, and while the guns which he may not use are at hand." But in war the soldier cannot consult his personal inclinations, but must act in accordance with the better judgment of his leaders. If every individual was allowed to act in accordance with his instincts, the result would be complete anarchy. Great commanders have often

[1] See Kunz, "Kriegsgeschichtliche Beispiele," Heft 16, p. 11. The 3rd and 4th Batteries of the 5th Regiment were shooting at the same target, the former at 1,500 metres, the latter at 2,250. Neither battery got a hit; the range was 2,000 metres.

[2] See the article, "Die taktische Verwendung der deutschen im Vergleich zu derjenigen der französischen Feldartillerie," *Militär Wochenblatt*, Nos. 114-116, to which frequent reference will be made.

turned a deaf ear to the requests of their subordinates for reinforcements which they would certainly have accorded if they had consulted their inclinations and not their better judgment.

These measures preparatory to opening fire are taken very seriously in France, and form an important part of the training of the officers. The author of the article in question calls the system laid down in the French drill book incomprehensible. It is only incomprehensible to those who are incapable of understanding it; practice makes it just as simple as laying is with us. This does not prevent him from expressing the hope that German batteries, when they have temporarily ceased fire, will act in a similar manner without special instructions on the point in the drill book. Here we once more see the spirit of optimism, which I do not share and can hardly understand, for it is a generally recognised truth that men only do in war what they have learnt in peace; and unfortunately not always even that.

If, on the one hand, the simultaneous opening of fire by every available battery, whether the object to be attained requires it or not, does not produce the results expected, on the other hand, there is no doubt that a battery which has not opened fire is in a much better position to turn its fire in a given direction, particularly if all necessary preparations have been made.

I consider that the principle laid down in the French drill book, that the batteries should be deployed at an early stage, but that they should only open fire when required, is very happily conceived. It is in accordance with the principle of economy of force without dividing force. It admits of a commander developing a powerful artillery fire at any moment, and allows him much greater liberty, since the batteries which have not opened fire are much more in hand. Briefly, it takes the fullest advantage of the increase in fire-effect due to the increase in the rate of fire. It is not necessary for the batteries to expose themselves, for the perfected laying apparatus and methods of shooting admit of fire from more or less covered positions. In comparison with this fundamental difference, all other differences between the French and German drill books are of minor importance, and I pass them by.

The idea that the great fire-effect of the gun compels the enemy to make every possible use of cover, and that therefore the artillery must endeavour to make their fire effective from the first or else they will be too late, runs like a red thread through the French drill book. This must be borne in mind in considering the French fire instructions. The drill book requires the most careful and complete preparation for fire. (Part I., 620—2°.) It lays more stress upon attaining the desired effect in the shortest possible time than with the least possible expenditure of ammunition. I consider this idea absolutely correct. The enemy can only be overcome if he is prevented from developing his strength by anticipating him. Therefore it is better to waste ammunition than time, though in this instance ammunition cannot be said to be wasted.[1] In brief, without going into every sentence, I am in complete agreement with the principles of the French fire instructions.

[1] It is a question whether more ammunition will be wasted when the 3 batteries of a brigade are firing at the same time at a comparatively narrow target, or when only one battery is shooting at the same target.

The French methods of fire may be taken as generally known. The fire instructions lay down that *tir progressif* is the normal method against a living target. By this method, when using rapid fire, a space of 500 metres deep is kept under fire. All the guns are layed upon some easily recognisable auxiliary mark, but with different deflections according to the orders of the battery commander. This method is very similar to our method of laying with the lining plane; but as the instruments are more exact, and the French attach no importance to pin-point shooting when using time-shrapnel, ranging for line is quite simple.

In contradistinction to the German regulations, time-shrapnel is used for ranging; the bracket of 200 metres is obtained, and fire for effect is then begun. This is carried out at four different elevations, the first being 100 metres less than the shorter elevation of the bracket, the remainder increasing by 100 metres each. It depends upon the width of the target whether the guns are traversed after each round or not. A single battery firing at a target 100 metres wide and less will not traverse; if the targets are wider (up to 200 metres) guns will be traversed after each round, so that fire may be evenly distributed over the whole front. Against wider targets more than one battery must be brought into action, or the parts of the target must be dealt with in succession. The method is very simple and quite mechanical. Of course, the battery commander or his assistants must understand the use of their instruments, especially the goniometer and the battery telescope; but this is easily learnt by practice.

The ranging with time-shrapnel is least in accordance with our ideas, and the attacks are proportionately directed against it. The author of the above-mentioned article combats in another article[1] the principle in the French drill book (para. 283) that observation of time-shrapnel is generally easier, because it is independent of the character of the country and of the nature of the soil. He is of opinion that "the cases in which it is difficult to observe percussion-shrapnel because of the nature of the ground, will either occur very seldom or not at all in war, for the target cannot utilise such ground as a position, and therefore if the range is altered, rounds of percussion-shapnel which can be observed will be obtained after not more than three rounds have been lost." It should be noted that Section 296, para. 3, of the German field artillery drill book, with reference to the observation of fire by the enemy says:—"Marshy ground or enclosed country in front of a position is favourable, so long as it does not interfere with power of movement to any great extent."

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[1] "Vergleich der Schiessregeln der deutschen und französischen Feldartillerie," *Militär Wochenblatt*, Nos. 122-125. It may incidentally be remarked that the view expressed on p. 2978, viz., "That it is easier to range with time-shrapnel by making direct corrections of fuse than by our system of making corrections by means of the '*Aufsatzschieber*'" (thumb-screw on the tangent-sight). is quite incorrect. Bursts low enough to be observed may be obtained just as easily by lowering the trajectory as by lengthening the fuse. If it is desired to range with time-shrapnel, the regulation of the height of burst, which we carry out after ranging, must precede the ranging—that is the only difference.

When common shell was the principal ammunition of the field artillery, ground of this character considerably lessened the fire-effect; but since shrapnel has become the principal—I may say the only—ammunition, the one advantage remaining is that such ground makes it difficult for the enemy to observe percussion-shrapnel.

It is further stated in the article mentioned that "ground of such a character as to prevent our seeing percussion-shrapnel equally affects time-shrapnel, for the height of burst must first be regulated. If a mistake has been made in estimating the angle of sight, it takes a long time to get rounds of time-shrapnel which can be observed. The number of rounds unobserved when ranging with percussion-shrapnel will be more than balanced by the rounds burst too high to be of any use for purposes of observation when ranging with time-shrapnel." These conclusions are not correct, and spring from false premisses.

Further, it must be observed that the French drill book does not admit of the angle of sight being measured by eye, but points out how important it is that this angle should be correctly measured. While the German batteries cannot measure this angle when shooting from covered positions, the French batteries possess an admirable instrument for this purpose in the battery telescope. Only in the event of the battery telescope and every other means (*e.g.*, a gun with a collimateur) failing is the possibility mentioned of estimating it from the map—a case which can hardly arise in practice. The impossibility of measuring the angle of sight makes it more difficult for the German batteries to regulate the height of burst than for the French, a point to which I will return later.

It becomes particularly difficult to observe percussion-shrapnel when the target is on a height, as is the rule in the case of an artillery target. If there is, in that case, a fold in the ground in front of the target, the observer will not only lose sight of those rounds that are over, but of those that are short. In such a case he cannot see whether his rounds are over or short of the target; but the case of time-shrapnel which cannot be observed is different. In this case, too, the observer does not know whether the bursts are short or over, but this does not affect him. Very soon all the bursts obtained will be such that they can be observed, appearing the same height as or a little higher than the target. This result is obtained by the application of one single, but infallible, method of correction, namely, raising the point of burst. Whether this is effected by increasing the angle of sight or by shortening the fuse is all one. The French drill book regulates the height of burst in the first place by altering the length of fuse, and only exceptionally by altering the angle of sight. While the German Regulations (Sec. 101) prescribe that the "*Aufsatzschieber*" (thumb-screw on the tangent-sight) should be altered one division (about 50 metres) to obviate bursts on graze, the French drill book lays down that when the first round of fire has only given bursts on graze, bold corrections of as many as four divisions of the corrector on the fuse-setting machine, which alter the point of burst by about 80 metres, shall be made. It is stated in a note (para. 288) that instead of making these corrections the angle of sight may be altered $\frac{5}{1000}$. In one example, even (No. 8), in which the battery is firing from a covered position against a target, which lies about 50 metres above it, and the angle of sight has not previously been measured, the battery commander, after having several

times shortened the fuse without success, alters the angle of sight as much as $\frac{20}{1000}$ to get bursts in air. As a matter of fact, therefore, it is not easy to understand why it should take longer for a French battery to regulate the height of burst. I maintain, on the contrary, that it must be easier for it to do so, for it is authorised to make bold corrections, while, as I have mentioned, the German Regulations only prescribe corrections of one division. I readily admit that a good observer in a German battery can make bold corrections too; but he must always bear in mind how many divisions he has altered the fuse after he has begun time-shrapnel, and must alter the range accordingly. The French battery commander is freed from this effort of memory, and in this he appears to me to have a great advantage; this is of course the consequence of regulating the height of burst before determining the range.

It is the case that, in ranging with time-shrapnel many rounds which burst too high cannot be observed. This was formerly of much greater importance than it is now, because the smoke on burst was much less, and because the very flat trajectory of modern guns has considerably reduced the probable error in height of shrapnel. The best proof that the observation of time-shrapnel is not so difficult lies in the fact that the Swedish and Danish field artillery, after the introduction of the Q.F. gun, have absolutely accepted the French methods of ranging, more particularly ranging with time-shrapnel.

I cannot understand the view (p. 2779 of the *Militär Wochenblatt*, No. 124, referred to above) "that when the height of burst has been regulated to $\frac{1}{1000}$th of the range, the correct height of burst ($\frac{3}{1000}$ths of the range) is not always obtained by altering the two divisions, it will often be necessary to make further corrections." I cannot imagine a case in which the height of burst thus obtained would not be correct. I am, of course, aware that corrections with the corrector on the fuse-setting machine make greater alterations in the point of burst for short than for long ranges. The difference, however, is not by a long way so great as the differences which we have to accept when making corrections by means of the "*Aufsatzschieber.*" It has no influence whatever on the effect of shrapnel, whether the mean height of burst is 2 or 3 metres higher or lower, more particularly if by distributing for depth an area of considerable depth is kept under fire.

How prejudiced the author's judgment of the French methods of shooting is, is shown by the fact that he objects to the great liberty which the drill book allows the battery commander. "The French drill book contradicts itself in allowing essentially different kinds of fire. The effect of time-shrapnel depends upon the dispersion of the bullets, and therefore a bracket of a certain size is logically correct. The limitation of this bracket must depend upon the supply of ammunition and the time available in which to obtain the desired effect. But the French allow, on the one hand, the bracket to be extended at pleasure, and order, on the other hand, fire to be opened at a single elevation as soon as a bracket of 50 metres has been obtained." In this the French drill book is only prescribing what our Regulations always order, action suitable to the circumstances of the case. One great advantage of the drill book is that it allows the battery commander this liberty in his choice of means. If it is a case of anticipating the enemy, which is the most likely case to occur, then it is of the greatest importance to begin effective fire as

early as possible. In such a case, *tir progressif* is suitable, *e.g.*, in engaging artillery. If the object, viz., of crippling the enemy, has been gained, still no decisive result has been attained, for the enemy will use every favourable opportunity for resuming the struggle. In such a case it would be a mistake and a useless waste of ammunition if the battery commander were to resume *tir progressif*. It would be equally wrong to pay no further attention to the target. If the battery is not engaged with another enemy, the battery commander will adopt *tir par salves au commandement du capitaine*, and will endeavour to reduce his 200-metre bracket by deliberate fire, in order to be able to crush the target, if it should be necessary, by means of fire at a single elevation, or, in case he has not succeeded in getting a 50-metre bracket, at two or three elevations. It is just because economy of time as well as of ammunition is necessary that the battery commander requires the liberty allowed him. Besides, the length of the bracket is not by any means left to the caprice of the battery commander. He is to endeavour to form a 200-metre bracket, and is only allowed to content himself with a longer bracket when he has not succeeded in this. The instructions are exactly the same on this point as in the German Regulations (Section 105, para. 2).

The author states (pp. 300-1):—"It can of course be proved mathematically that *tir progressif* can obtain 25 hits on an enemy's battery in $4\frac{1}{2}$ minutes; but in my opinion the fact should be emphasised that, while science can determine how such a result *may* be obtained, it cannot determine how it *will* or *must* be obtained. Every hit obtained does not of course put a man out of action." This observation appears to be aimed at a calculation in my book, "Die französischen Feldartillerie" (p. 50). I do not believe that any one who reads the passage in question, particularly if he is acquainted with my writings, can arrive at the conclusion that I wish to maintain that *tir progressif* must in every case obtain such a number of hits. I merely wished to combat the careless expression of opinion that this method of fire implies waste of ammunition, and to give an example of what might be expected of it. As a matter of fact, it was very necessary to do this, as very false views were prevalent on the point. General von Hoffbauer estimated the effect so low that he believed that it would be necessary to repeat *tir progressif* five or six times to obtain an adequate result. Views as false as this must lead to the conclusion that the German methods of shooting are not only as good as the French, but far superior to them. This dangerous spirit of optimism has to a great degree contributed to the delay in the re-armament of the German artillery. That my calculation was approximately correct is clearly shown by the experiments in Roumania which have been referred to above. My calculation of the number of hits agrees almost exactly with the number of hits obtained there. See the article, "Uber Schiessverfahren bei der Feldartillerie" (*Jahrbücher*, 1903, No. 387, p. 615). This trial was specially interesting, because in this case results of firing in accordance with the French methods were published for the first time. The Swedish Field Artillery School has also arrived at the same results as I have, and has found them justified by experiments (*Jahrbücher*, No. 392, 1904, p. 523).

I do not require to be taught that 25 hits do not put 25 men out of action. I have myself stated in the above-quoted passage that

perhaps some 20 figures would be hit, which shows that the hits are evenly distributed. I may further mention for the benefit of sceptics that according to my estimate ranging for *tir progressif* takes 2½ minutes, and that this agrees exactly with the time taken at a practice carried out in France, which is reported by the *Revue d'Artillerie* of March, 1902 (p. 460). In the practice carried out in Roumania, the firing, after the range was obtained, lasted, the first time (*tir fauchant*) 52 seconds; the second time (with constant deflection) only 40 seconds. I had assumed 2 minutes as the time of fire. After this it cannot be pretended that my assumptions are too favourable to the French method.

It would have been very easy to have obtained evidence as to the effect of *tir progressif* with one of the numerous experimental batteries. This would have been the best way of removing all doubts on the subject.

The views which I have quoted above are very wide-spread, and this is the reason I have dealt with them so thoroughly. They are a sign of the deadly spirit of optimism which has taken such a hold in certain quarters in the artillery. An unhealthy spirit of optimism has more than once been the cause of preparations for war not being thoroughly carried out. The French in 1870, the English in 1899, and in more recent times the Russians, have experienced this to their cost. We are now suffering from the sad consequences of it in South-West Africa. The Austrians did not recognise the advantages of the needle-gun. This cost them the hegemony of the German States and a fair province. We had to pay with rivers of blood for the fact that our infantry in 1870 were armed with a rifle inferior to that of the French.

The *rôle* of Cassandra is always thankless, for it never inspires belief. Nevertheless, I think it necessary to insist on the fact that with the introduction of the Q.F. gun the work is only half done. A suitable drill book, suitable methods of shooting, and new principles for its employment are absolutely necessary for the new weapon. But if it is maintained that the existing arrangements are satisfactory, there is no reason for making alterations. I do not state that the French methods should be copied blindly, but that they should be tested without prejudice. I am unable to find the impulse necessary in contemporary literature, which, whatever may be said to the contrary, is the best indication of the state of thought on a given subject. As long as people have no clear idea of the effect of the rapid fire of the Q.F. gun, and more particularly of the French methods of shooting, it is impossible to form a correct judgment on the instructions contained in the French drill book. I do not think there can be any doubt after what I have said that such judgment is wanting in the views I have quoted.

I foresee that after this exposition of my views I shall be accused of Gallomania; but I fear this accusation as little as I do that my views will cause uneasiness in the Army. As regards the first accusation, I may refer to my former writings, in which I have always brought the weak points of the French gun to notice; but this has not prevented me from proclaiming this gun's superiority to the German '96 gun. The German gun is not remarkable for a single clever or even new idea. Whereas the fundamental idea underlying the construction of the French gun bears the stamp of a great mind. The boldness of the conception of completely over-

coming the recoil of the gun is as remarkable as the genius with which the idea has been worked out. The introduction of this gun marks the beginning of a new era in the development of field artillery. It is not by recognising this fact, but by resolutely ignoring it, that such uneasiness as exists has been caused. The obstinacy with which this fact has been concealed makes it all the more necessary loudly to proclaim the truth, which is slowly but none the less surely gaining ground in Germany.

The necessity for re-arming the field artillery will no longer be disputed by anybody. It is my fixed opinion that changes in organisation, in tactics, and in methods of shooting, will follow this measure in the direction which I have for a long time pointed out. It is only in this way that the German field artillery can regain the supremacy it has lost.

AFTER MUKDEN:
A RUSSIAN VERDICT ON RUSSIAN FAILURES.

Translated from the "Russian Gazette" by Lieutenant W. H. BINGHAM, 69th Punjabis.

THE present article is chosen from the contributions of a writer enjoying a very nearly similar reputation in Russia to the *Times* military critic in England. The ever-increasing outspokenness of criticisms has, notwithstanding, not yet reached the point where a writer may say everything he thinks. The remarks about the late Russian Commander-in-Chief will come as no shock to any familiar with the Russian character and its conceptions of chivalry. Perhaps the most interesting sign of the times is to be found in the publication of official justifications on the conduct of the war, backed up by official figures. Whether this merely reflects incipient dissension in high places, or is preparing the public for a national "climb down," is a problem upon which speculation is rife.

WHO'S TO BLAME?

Moscow, 31st March, 1905.

In the *Russki Invalid*[1] (dated 24th March) appears a comprehensive article on the burning question of the day as to our unpreparedness for war with Japan, and its author, armed with figures, and apparently on the strength of a series of weighty arguments, attempts to exculpate our Ministry of War from the heavy charges of incompetency and neglect in the conduct of the land campaign, involving with it disasters to our Army unheard of in the history of Russia. The figures brought forward by the *Russki Invalid* are really paralysing in their magnitude. During the past 13 months of the war, up to the 12th March of the current year inclusive, 13,087 officers, 761,467 rank and file, 146,408 horses, 1,521 guns, and close on 500,000 tons of various military goods have been carried to Kharbin by the railway. This works out to an average monthly delivery at Kharbin of 1,007 officers, 58,574 men, 11,262 horses, 117 guns, and about 38,460 tons of war *matériel*. In other words, every month brought into Kharbin from 1½ to 2 army corps, every day close on two battalions (or more accurately, 1,918 men) of reinforcements were brought up. It must be admitted that these figures leave far behind all the calculations as to the despatch of reinforcements to the Far East which we have hitherto had to go on, based on chance and incomplete data, in judging of the situation at the theatre of war. The first impression left on the reader by

[1] The official organ of the Headquarters General Staff at St. Petersburg. —W.H.B.

the figures of the *Russki Invalid* resolves itself into the unsolvable problem as to whither this gigantic Army, concentrated by us at the theatre of war in South and Central Manchuria, has disappeared.

In Kharbin, south of Kharbin, and as far as Port Arthur inclusive, 56,000 troops, with 60 field guns (including the Frontier and Railway Guards) were already distributed at the beginning of the war, and in addition troops were coming in to Kharbin from Blagoveshtchensk and Eastern Trans-Baikalia, not by rail but route march (approximately 5,000). Consequently we had altogether 823,000 men and 1,580 field guns south of Kharbin in the course of the 13 months of war; whereas at the present moment out of this enormous mass all that is left is General Linievitch's Army, which cannot exceed 300,000 to 320,000, while its whole communications up to Kharbin thrown in. It would appear from the above that for the year's war we have lost half a million soldiers. We have despatched troops almost double the strength of the Army demanded by General Kuropatkin (400,000) for the expeditious conclusion of the war, but even two-thirds of this enormous host has melted away in these 13 months of campaigning. If that is so, then without doubt the moral responsibility for the lamentable outcome of the 1904-5 campaign falls with almost its entire weight upon General Kuropatkin, supervising our military operations in Manchuria. It appears from the figures of the *Russki Invalid* that General Kuropatkin almost during the whole course of the war had the benefit of an undoubtedly considerable excess over the Japanese forces, but was incapable of taking advantage of the numerical superiority of his troops over the enemy, and aimlessly wasted his strength and sacrificed the blood of his soldiers.

General Kuropatkin's destiny is remarkable, and vividly reflects the nature and moral aspect of our military society and the Jingo portion of our Press. In February of last year General Kuropatkin triumphantly set out for the theatre of war, and was, in advance, honoured with ovations that usually only fall to the lot of conquerors and national heroes. As far back as last summer the *Moscow Gazette* (*Moskóvskia Viáydomosti*)[1] wrote that complete victory over Japan was undoubtable so long as General Kuropatkin remained at the head of our Army. The *Moscow Gazette* admitted the loss of the campaign to be possible only in case "the enemies of Russia succeeded in replacing A. N. Kuropatkin." After Liao-yang the *Moscow Gazette* and *Novoe Vremya* insisted upon "a free hand and full power" for General Kuropatkin, with the consolation that all must go better and better with the change of his title from "Commander" to "Commander-in-Chief." After the capture of the Putiloff "kopje" this programme was realised; and six months have scarce passed over General Kuropatkin's head before the *Moscow Gazette* converts him from "mighty leader and hero" into some "Benedeck," or a general whom it hardly considers fit to command a single Army, let alone three. The talents of General Kuropatkin, according to the indulgent estimate of this competent critic, are only suitable for the functions of an army corps commander. True, General Kuropatkin has suffered a disaster at Mukden far greater than all his

[1] The most scurrilous of the *reactionary* organs, which has more than once, even in official assemblies, been referred to as the "foe of the fatherland," and other less flattering and parliamentary epithets.—W.H.B.

previous failures; but surely the disasters of Liao-yang and the Sha-ho river, the failure at Sande-pu, and the capture of Port Arthur, taken together, surpass the catastrophe at Mukden. *Sic transit gloria mundi.*

We are not in the least anxious to undertake the thankless task of justifying the strategy and tactics of General Kuropatkin. On the contrary, as far as the present state of our Press admits, the writer of these lines strove as far back as the battle of Tiuren-cheng to indicate General Kuropatkin's blunders in the conduct of military operations, his constant policy of half-measures, his eternal vacillation between retreat and advance, and the absence of any decided plan of campaign. But it would now be unjust in the extreme to lay the whole burden of guilt for the loss of the campaign upon General Kuropatkin, as Commander-in-Chief, and his staff. To begin with, however enormous be the forces placed at the disposal of General Kuropatkin for the prosecution of the war, the figures for the strength of the rank and file shipped to Kharbin give a very exaggerated idea of the number of rifles and sabres in our Manchurian Army. The figures 761,467 for rank and file, to be absolutely accurate, represent not the number of actual combatants but the number of passengers arriving at Kharbin. Evidently these numbers include not only combatant rank and file, but also non-combatants (artificers, bakers, medical corps, hospital attendants, etc.), who form unavoidable accompaniments to an Army, as well as various details of the auxiliary services (flying artillery parks, drivers, and mounted transport troops, etc.), who cannot be put in the fighting line. That this is the case is apparent from the mere fact of the comparatively small proportion per cent. of officers to the masses of rank and file carried to Kharbin. From the totals arriving at the theatre of war we get 1 officer to 58 rank and file; whereas in our Army, on the war footing, the proportions are:—In the infantry arm, 40 to 50 rank and file (combatant and non-combatant); in the cavalry, 35 to 40; in the artillery and engineers, 40 to 45 men per officer. If we further take into consideration divisional, army corps, and headquarter staffs, we ought to get not more than 40 to 45 men per officer in combatant units. Consequently, from these proportions it may be accepted that in the figures of 761,000 soldiers carried to Kharbin, 75 per cent. at the outside belonged to the combatant forces, and nearly 200,000 men to auxiliary services, who could not be put into the fighting line. Out of the general mass of over 800,000 arriving at the theatre of war, in no case could the fighting element have exceeded 600,000 men. Only if this be admitted can the outcome of the campaign become intelligible, and our rulers be absolved from the implication of concealing the heavy losses inflicted upon the Army during the war. If the general strength of our forces for the whole campaign be fixed at 600,000 (exclusive of non-combatants), then, deducting from this figure the present strength of General Linievitch's troops (300,000 to 320,000), our total losses for the whole campaign come to 280,000 to 300,000, and not half a million.

Two hundred thousand soldiers, who must be cancelled from the grand total of the mass transported to Kharbin, make an enormous difference; why, this is equivalent to 5 whole army corps, with artillery and cavalry. Naturally, to send 5 army corps in place of these non-combatants would be to no purpose, as an army cannot live without hospitals, bakers, small-arm artificers, and parks; but could

it not have been made feasible to despatch at least three, if not five, army corps in addition to the 600,000 combatants actually sent out? We entirely agree with the *Russki Invalid*, that with all the desire in the world, the Trans-Siberian Railway, with its single track, could not possibly have managed to carry more than it has done. Judging by the figures of the *Russki Invalid*, not less than 182 wagons on an average (66 passengers and 116 goods), *i.e.*, 7 to 8 trains in the 24 hours, arrived daily at Kharbin. And yet troops, moving by the Trans-Siberian Railway, and war *matériel*, proceeded not only to Kharbin, but Vladivostok too. Besides that it must not be forgotten that Siberia could not be altogether cut off from the rest of the world, and the carriage of private goods and passengers along the Siberian railway line could not be entirely suspended. But then the reproach of our not having utilised out water-ways for the transport of troops remains in its full force, and the remark of the *Russki Invalid*, that the rivers of Siberia unfortunately flow in a lateral direction, only calls forth a smile. As pointed out a year ago in these articles, it is no secret to anybody that between Nishni-Novgorod, Kharbin, and Vladivostok there is an almost continuous water-way, broken only by two railway branches (Perm to Tiumen and Vierkhniayoodéensk to Striaytiensk), a total length of 1,650 versts, *i.e.*, altogether one-sixth of the whole distance. True, the well-known Obi and Yenesei canal, and the rapids on the river Angara below Irkutsk, might perhaps interfere with the transport of troops and material by river; but why, then, have millions of national money been wasted there in their time on canal excavation and blowing up the rapids? The obstacles against rendering the great Siberian water-ways fit for the transport of troops are in no case more formidable than those which already have had to be overcome by the Minister of Communications before the Siberian Railway could be rendered capable of running 10 pairs of trains in the 24 hours. The waters of the Kama, Obi, and Yenesei are ploughed by hundreds of steamers and thousands of barges. In the China campaign of 1900 we put over 40,000 men at the theatre of war on the Amur, and on the Sungari, to Kharbin, sailed not only barges with supplies, but entire floating hospitals.

Why is it possible to carry sick on the rivers and impossible to transport the healthy? However, the Ministry of Ways and Communications have now at length admitted their mistake, and from information from reliable sources are energetically preparing to organise the transport of troops to the theatre of war by the rivers of Siberia. If this had been carried out in proper time, at the commencement of the year, it would probably have been possible to place 3 extra army corps at Kharbin (one by river on the Sungari, and two by the circuitous route to Khabarovsk and Lake Khanka, and then by the Ussuri and Manchurian Railways). Thus it would have been possible to escape many evils. The neglect of water lines of communication forms the first big minus in the efficiency of our military bureaucracy and Ministry of Communications.

A BRIEF HISTORICAL SKETCH OF THE IRISH INFANTRY REGIMENT OF DILLON AND THE IRISH STUART REGIMENTS IN THE SERVICE OF FRANCE, 1690-1791.

Continued from April JOURNAL, p. 449.

THE death of the Kaiser, Karl VI., on the 20th October, 1740, was to plunge Europe once more into a great war. Dying without male heirs, the Kaiser, under an instrument executed some years earlier and known to history as the Pragmatic Sanction, had left his daughter, the young and beautiful Maria Theresa, recently married to Francis Joseph, Duke of Lorraine—later himself elected Kaiser—heiress to his extensive dominions. No sooner, however, was the Kaiser's death made known, than Prussia, Bavaria, and Saxony proceeded to dispute the rights of his daughter, who had already been proclaimed Queen of Hungary, Bohemia, and Sovereign Arch-Duchess of Austria, etc., amid the enthusiastic plaudits of her subjects. Prussia had long claimed part of Silesia, and in the latter part of December of the same year, without any formal declaration of war, Frederick moved his Army across the frontier, and his first invasion of Silesia began. We are not concerned here with Frederick's action, except in so far as it was the raising of the curtain on the first act of that great struggle known as the War of the Austrian Succession, which lasted nearly eight years, and one of the indirect results of which, through France and England being dragged into the vortex, was in the near future to seal the destiny of the northern half of the great American Continent.

During 1741, the war clouds grew ever heavier, and it was on 21st September of that year that Maria Theresa made her historic, passionate appeal to the Hungarian Diet, holding her baby—the future Kaiser Joseph II.—up in her arms before them, an appeal which so touched their wild Magyar hearts, that the whole Assembly, springing up as one man and flourishing aloft their drawn swords, replied impetuously with the shout: "*Moriamur pro Rege nostro Maria Theresia*," words immediately translated into deeds by the unanimous decreeing of the so-called general *Insurrection* of the kingdom — practically a *levée en masse* of the fighting population—many of the great nobles taking the field with their whole retainers, armed and equipped entirely at their own cost.

It was some time before the Irish Regiments in France were generally and actively engaged in the new war; and it was not until the spring of 1744, nearly a year after the battle of Dettingen had been fought, that any formal declaration of hostilities between France and England was made. In 1741 all the Fusilier companies of the several Irish battalions were increased from 30 to 40 per company; all the Grenadier companies from 30 to 45 men, while an addition of 2 officers to each company was also made. In April, 1743, the Dillon Regiment, numbering six hundred and eighty-five officers and men, arrived at Metz and joined

the Army of the Rhine, under the command of the Marshal Duke de Noailles. During the continuance of the War of the Austrian Succession the five Regiments of Clare, Dillon, Bulkley, Ruth, and Berwick were grouped, and formed the Irish Brigade.

On 27th June, 1743, the two countries being still nominally at peace—the French professing to act only as auxiliaries of the newly-elected Kaiser, Karl VII., Elector of Bavaria, the English only in the same capacity to Maria Theresa—was fought the battle of Dettingen, the first engagement of the war between the Armies of France and Great Britain. The allied English, Austrian, and Hanoverian forces, numbering in all some 44,000 men, were under the command of the Earl of Stair, who was accompanied by George II. and his son, the Duke of Cumberland. Stair had moved from his base at Hanau—a town lying some ten miles to the east of Frankfort—with the view of offering the French battle; this, however, de Noailles declined—although his force was the stronger—and contented himself with cutting off his enemy's supplies, capturing his river-boats and convoys, as the Allied Army advanced to Aschaffenburg on the Main, where there was a bridge across the river, by means of which the Earl hoped to obtain access to fresh country from which to draw supplies for his troops. But he found his way barred, as the Marshal had erected some redoubts, too strong to be forced, at his end of the bridge, so after waiting some days, seeing nothing before him but starvation or surrender, Stair determined to force his way back to his old base at Hanau, which had now become an extremely difficult operation in face of the superior French Army and the steps which de Noailles had in the meantime taken to cut his retreat off.

De Noailles's plans for bringing the Allies to bay and of possibly effecting the capture of their whole Army, with the English King as well, seem to have been very well devised, had but its execution been properly carried out; but the whole scheme of battle failed, thanks to the impetuosity of his nephew, the young Duke de Grammont, who, in command of a strong force, had been entrusted with the duty of holding the defile of Dettingen, where he was strictly enjoined to wait the order to attack, it being the intention of the Marshal to wait until the Allied Army was entangled in the small, boggy plain, through which it would have to struggle before reaching the defile, and which was commanded by some batteries skilfully placed by the Marshal. De Grammont, apparently getting tired of inactively holding the position assigned to him, and in direct disobedience of the orders he had received, directed his troops to quit the safe position they held and move down into the plain to meet the advance of the Allies, thus masking the French batteries and putting his force into the very position de Noailles had intended for the discomfiture of the enemy, as he was now confronted with their full strength and exposed to a heavy fire from their batteries, and although he achieved at first a partial success, yet his troops finally broke themselves in vain against the stubborn resistance offered by the English and Austrian infantry, and the day ended by the complete failure of the French attack. During the night the Allies fell back on Hanau unmolested, leaving, however, their dead and wounded on the field to be cared for by de Noailles. The loss on the French side was 2,659 men, that of the Allies being somewhat greater, as their wounded became prisoners. The Irish Brigade was on the extreme right of the French line, and was

intended by the Marshal to have been the first brigade to attack; but as things turned out it practically took no part in the day's fighting. After the battle, de Noailles re-crossed the Rhine, the Army going into winter quarters, Dillon's being stationed at Sedan.

In the early part of 1744 the Colonel of Dillon's, Count Henry Dillon, having succeeded to his brother's Irish Viscounty, was obliged, in order to preserve his peerage and estates in Ireland, to leave the French Service and return to his native country, the proprietary rights in the Regiment and its command passing to his younger brother, James Dillon, a Knight of Malta. On the 29th February, 1744, Louis XV., previous to the declaration of war with England, wrote through the Count d'Argenson (the Minister of War) to the Marquis de Cébret, then commanding the Army in Flanders, the following letter, which is of interest as showing the high appreciation of the King for the Irish Regiments and his anxiety to strengthen them by all means possible: — "The King, in consideration of the excellent services which his Irish troops have rendered him in the preceding wars and are still continuing to render daily, directs that these regiments shall be allowed to recruit as many supernumeraries as they can over and above their allotted strength, and that as these men, the regiments being complete, could only be maintained at the expense of the Captains, if not specially provided before, His Majesty directs that full returns of such supernumeraries should be sent in, and that they should be paid at the rate of 6 sols 6 deniers a man per day until it has been determined whether to increase the regiments of this nation by one or more battalions."[1] The letter concludes by directing the Prefect of Flanders to make the necessary financial arrangements.

It was in 1744 that the French regiments first commenced to adopt cartridges, which had already been in use for some time by the English, the rapidity of whose fire at Dettingen consequent upon their use having been much superior to that of the French. It was also in this year that the formation in three ranks was adopted, a formation which remained in force until the end of the Wars of the First Empire.

Before the end of March war was at last officially declared both by France and England, and the command of the French Army in Flanders was entrusted to Marshal the Count de Saxe, under Louis XV., who accompanied his forces in this campaign in person. On the 1st June, Dillon's rejoined the Army, which between that date and the 11th July reduced Menin, Ypres, and Furnes. In July the King left for the Army in Germany, taking with him as reinforcements for the Army of the Rhine 26 battalions of infantry and 33 squadrons of cavalry, which left the Marshal at Courtray with only some 45,000 men to oppose to the 70,000 of the allied British, Dutch, and Austrian forces. In spite of this disadvantage in the point of numbers, Marshal Saxe, although too weak to take the offensive, yet managed to keep the Allied generals in check, so that they were unable to effect anything of importance that year.

October 1st of this year the effective of the Irish battalions was reduced from 685 to 645, at the same time the pay of the non-commissioned officers and men was increased by two sols a day. From

[1] Historique du 87e Régiment d'Infanterie. Première Partie : Ancienne Monarchie—Régiment d'Infanterie Irlandaise de Dillon (1690-1791).

the supernumerary officers and men thus obtained and 245 men subsequently levied, a new Irish Infantry Regiment was raised, which, from the name of its first commander, was known as the Regiment of Lally. This distinguished officer, who afterwards became known in history as Count Lally-Tollendal, and who, as the celebrated Governor-General of the French possessions in India, came near to securing that magnificent prize for his adopted country, was the son of Sir Gérard Lally, whose eldest brother, James Lally, raised in 1689 and commanded the original 2nd Battalion of Dillon's Regiment, which was ordinarily known as the Battalion of Lally, and in which Gérard and his two younger brothers each commanded a company. Sir Gérard, who had succeeded to the command of Dillon's in 1708, died a Major-General in 1737. Arthur Lally, born in 1702, was brought up by his father from his infancy to be a soldier, and when hardly twelve had already smelt powder as an ensign with the Regiment in Spain. Devotedly attached to his military profession, a born linguist, a deep student, young Lally soon came under notice for his complete knowledge of both the theory and practice of the several branches of his profession, including the various duties of the *état-major*, a thorough mastery of which was a rare accomplishment for officers in those days. Promoted to Captain in February, 1728, Lally served with distinction during the war with Germany, 1733-1735; in 1738 he was selected to undertake some delicate negotiations with the Empress Anne of Russia, which he carried through with great success; in November, 1741, he was promoted to Major in his Regiment, and during the campaign in Flanders was selected by the Marshal de Noailles as his Aide-Major, rendering valuable services in rallying the troops after the disaster at Dettingen. Promoted to Colonel in February, 1744, he was selected for the command of the new Regiment, and applied himself with such success to its organising and instruction during the winter and spring of 1744-45 that it was perfectly fit to take the field in the campaign of 1745, rendered memorable by the battle of Fontenoy.[1]

[1] The following details with regard to the issue of rations during the campaign of 1745 may be of interest :—

"To the Irish Regiment of Dillon, 13 companies strong with the Staff, the daily number of rations issued was nine hundred and thirty-three, divided as follows :—

"Sixty-four to the Grenadier Company of forty-nine officers and men, of which six were allotted to the Captain on the Establishment, and four to each of the supernumerary half-pay Captains; four to the Lieutenant on the Establishment, and three to the supernumerary half-pay Lieutenant; two to each of the two sergeants, and one to each of the Grenadiers, including the drummer.

"Eight hundred and twenty-eight rations to the twelve Fusilier Companies in the proportion of sixty-nine to each company of fifty-four officers and men, of which six were allotted to the Captain on the Establishment and four to each of the supernumerary and half-pay officers of that rank; four to the Lieutenant on the Establishment, and three to the supernumerary half-pay one; two to each of the Sergeants and one to each of the forty-eight soldiers and cadets, including the drummer; six rations to the two Ensigns of the Colonel's and Lieut.-Colonel's Companies, in the proportion of three to each.

"Thirty-five to the Staff of the Regiment, of which twelve were allotted to the Colonel and six to the Lieut.-Colonel, independently

In April, 1745, both the opposing Armies assembled for the new campaign. The French were again commanded by the Marshal de Saxe, who was accompanied to the field by the King, Louis XV., and the Dauphin, and were distributed as follows:—Some 18,000 were employed to invest the strongly fortified and well-garrisoned Dutch frontier town of Tournai; 6,000 were employed to guard the bridges over the Scheldt and other communications, leaving 40,000 to cover the siege and give battle to the Allies. The Irish Brigade, which formed part of the Army, was composed of the Infantry Regiments of Clare, Dillon, Bulkley, Ruth, Berwick, and Lally, with the Cavalry Regiment of Fitz-James, and were commanded by Lieut.-General Charles O'Brien, 6th Viscount Clare, who was subsequently created a Marshal of France, under the designation of the "Maréchal de '*Thomond*,'" an Irish Earldom forfeited by his adherence to the exiled King. The Allied forces, which were under the command of the Duke of Cumberland, were estimated at between 55,000 and 56,000 men, composed of some of the finest troops in Europe, of which 21,000 were British and 8,000 Hanoverian.

In the beginning of May the Duke of Cumberland advanced to raise the siege of Tournai, and the Marshal de Saxe, leaving 20,000 men before the town, took up an advantageous position to the north side of the Scheldt on an extensive triangular plain, with his right resting on the villages of Antoine and Escaut, his centre on Fontenoy and his left extended behind the woods of Barry or Vezon to the village of Ramecroix. The entire position was well protected by redoubts and abattis, 110 guns being mounted in the different works, one of the most formidable of which, known as the "Redoute d'Eu," from the regiment which held it, being constructed at the corner of the wood, commanding with a cross-fire the plain between it and Fontenoy. It was this space between the wood and the village of Fontenoy which afforded any opening for attack and by which the position could be penetrated, a feat, however, which the Marshal did not consider practicable, or, as he confessed afterwards, he would have constructed another redoubt half-way between the two points mentioned; "Je n'ai pas cru," remarked the Marshal, after the battle, to the King, "qu'il y eut des généraux assez hardis pour hasarder de passer cet endroit." Fortunately, as things turned out, another weak point had been discovered by the indefatigable Lally, between Antoine

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of the rations allotted to them in their capacity of Captains of Companies; six similarly to the Major; four to the Aide-Major; three to the Quartermaster; and two to each of the Paymasters and Surgeons.

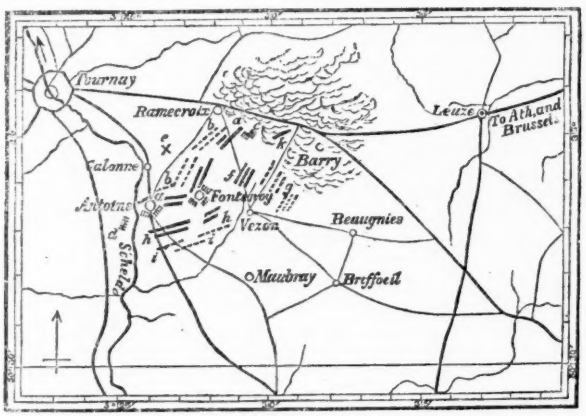
"The bread ration consisted of twenty-four ounces (seven hundred and fifty grammes) baked and stale, and twenty-eight ounces (eight hundred and sixty-five grammes) in the form of dough; its cash value in lieu was twenty-one deniers. The biscuit ration was eighteen ounces (five hundred and fifty-two grammes).

"For forage, the rations, composed of 10 lbs. of hay and half a bushel of oats, were supplied to each Irish Infantry Regiment in the proportion of one hundred and seventy-five rations.

"Seven hundred and twenty-five trusses of straw of 10 lbs. each were supplied for sleeping purposes." (Extrait des cahiers manuscrits de M. de Séchelles, Intendant en Chef de l'Armée de Flandre.—Bibliothèque de Département de la Guerre.—Historique du 87e Régiment d'Infanterie.—Régiment de Dillon, 1690-1791.)

and Fontenoy, and made secure by the erection of three redoubts, which on the day of the battle effectually kept the Dutch and Austrians in check and frustrated all attempts on their part to turn the Marshal's right.

The battle began early in the morning of the 11th May. The Dutch and Austrians, under the Prince of Waldeck, forming the Duke of Cumberland's left, were ordered to break in the French right between Fontenoy and Antoine; but, meeting with an unexpectedly fierce resistance and a heavy fire from the French batteries, they withdrew under shelter, where they remained practically all day, effecting nothing, in spite of all the endeavours of the Prince to encourage them to persevere in the attack. On the Duke of Cumberland's right Brigadier-General Ingoldsby was ordered to advance through the wood of Barry and storm the "Redoute d'Eu," the guns



a a. French Infantry.
b b. French Horse.
c. Redoute d'Eu.
d. French Battery.
e. Gallows-Hill, where King Louis and the Dauphin were.
f. English Foot.
g. English Horse.
hh. Dutch and Austrian Foot
i i Dutch and Austrian Horse.
k. Ingoldsby's column for attack on Redoute d'Eu.

from which the Duke saw would take him in flank and rear when the centre advanced under his own command to attack Fontenoy itself. But the redoubt was as stoutly held as those on the left, and Ingoldsby, considering the task beyond him, remained as inactive on his wing as the Dutch and Austrians did on theirs, for which he was afterwards tried by court-martial. Towards noon the Duke, who displayed that day the most conspicuous bravery, infuriated by the failure of the troops on his flanks to storm any of the French positions, determined at all hazards to pierce the French centre. Forming his British and Hanoverian infantry—some 20,000 strong, with 20 pieces of artillery dragged by hand—into the now historic column, he put himself at its head, and in spite of the destructive cross-fire from the guns posted in the village of Fontenoy and the "Redoute d'Eu," he forced his way over the plain, taking advantage of some cover, afforded by a slight hollow in the ground, through the narrow gap some 900 yards wide already mentioned into the heart of the French centre, which was held by the French

guards,[1] who gave way battalion after battalion before the steady but resistless advance of this dense mass of men and the heavy fire they poured in from both their guns and muskets, which was described by French authorities as being the most murderous continuous fire that had ever been seen. In vain the flower of the French cavalry charged in support of their discomfited infantry; they in their turn had to recoil shattered; *the Régiment du Roi, charging at full gallop, received, so it is said, one volley which brought 460 of their men to the ground*, while the apparently invulnerable column steadily continued its forward march, bearing down all opposition before it. It seemed as if the day was lost for France, and lost it would have been hopelessly had the Duke of Cumberland been properly supported by his Allies; for if the Dutch and Austrians at this juncture had succeeded in penetrating the French line opposite to them, as it is asserted they might have done if the assault they attempted had been seriously pressed home, the French would have been not merely beaten but disastrously routed, as their retreat across the river would have been cut off, and both the King and Dauphin would probably have been made prisoners.

"There was one dreadful hour," wrote the Marquis d'Argenson, the Minister of Foreign Affairs, who was a looker-on with Louis XV., "in which we expected nothing less than a renewal of the affair at Dettingen, our men being awed by the steady advance of the English, and by their rolling fire, which was really infernal (feu infernal), and I assure you enough to stupefy the most unconcerned spectators. Then it was that we began to *despair of our cause.*"

So dangerous did the position seem to the Marshal de Saxe that he sent to the King imploring him to at once recross the bridge, adding:—"Qu'il ferait ce qu'il pourrait pour remédier au désordre." "Oh, je suis bien sûr qu'il fera tout ce qu'il faudra," rejoined the King, "mais je resterai où je suis."

Unsupported, however, on both of its flanks and without cavalry to complete the discomfiture of the, temporarily at least, broken French infantry, galled moreover by the cross-fire to which it had been exposed, and somewhat shaken by the heavy losses sustained, although the gaps had been immediately closed up, the English column having penetrated some three hundred yards beyond the village of Fontenoy, at last came to a halt, forming a somewhat confused mass in the middle of the plain, the Duke having got so far, and not seeing his way farther.

But the short pause which followed gave Saxe the opportunity of retrieving the day. Profiting by the Duke's hesitation, and acting as believed on the advice of Count Lally, who was "*impatient that the devotion of the Irish Brigade*, which up till then, owing to its position in the line, had not been engaged, *was not turned to account*," he brought up four guns, which, with a strong unbroken body of mounted troops known as "la Maison Militaire du Roi," had been

[1] It was on this occasion that the celebrated exchange of civilities between the officers of the English and French Guards took place, when within fifty yards of each other, before opening fire. That they saluted each other by raising their hats is certain, but whether the "*Monsieur, faites tirer vos gens*" of Lord Charles Hay to the Marquis d'Auteroche, and the latter's reported reply, "*Non, Monsieur, nous ne tirons jamais les premiers*," is authentic, appears doubtful.

kept in reserve, and rallying his other troops, prepared for a simultaneous assault upon the front and flanks of the English column.

The Irish Brigade was selected to head the attack on the right flank, supported by the Regiments of Normandie and Royal-Vaisseaux, while the cavalry of the "Maison du Roi," the gendarmerie and carabineers charged the front, the troops which had been holding Fontenoy and Antoine simultaneously moving on the left. The four guns skilfully posted, wrought great havoc and confusion in the dense ranks of the English, and prepared the way for the general attack which now followed. The Irish Regiments particularly distinguished themselves by the fury of their onslaught, animated as they were by national religious and dynastic hatred of their foes. "*Marchez contre les ennemis de la France et les vôtres,*" exclaimed Lally to his men, "*ne tirez que quand vous aurez la pointe de vos bayonnettes sur leur ventre*";[1] but the stubborn infantry of Britain gallantly stood their ground and poured a deadly fire into the Irish, who, however, in obedience to the orders they had received, did not return it until they were actually crossing bayonets, then the great column, thinned by slaughter and worn down by their previous exertions, at last wavered and gave; but although thrown into disorder and forced to retreat, they soon rallied, and eventually retired without confusion through the hollow way by which they had originally advanced, and successfully reached the wood of Barry. No attempt at pursuit was made by the French, the Marshal de Saxe and his generals feeling only too relieved that good luck had enabled them at the last moment to snatch a victory when they were expecting annihilation; the battle was lost to the English, but as a French contemporary military writer put it:—"*Ils furent vaincus avec honneur.*"

Almost all French writers are agreed that the victory was due to the impetuous and irresistible onslaught of the Irish Brigade on the right flank of the British column. The French Official Memoir, when recording the services of Lord Clare on his promotion to the rank of Marshal, premises how, as Lieut.-General at Fontenoy, "*à la tête des Brigades Irlandaises, il tomba sur le flanc de la colonne d'Anglais et d'Hanovriens, qui s'était fait jour au milieu de l'Armée Française,*" and adds how "*il la culbuta, l'enfonça, la mit en fuite, prit 2 drapeaux et 15 pièces de canon.*" The Brigade suffered heavily, ninety-eight officers being killed and wounded, among the latter, dangerously, being Lord Clare, who was struck by two bullets. Dillon's lost its Colonel, James Dillon, killed, and fourteen other officers killed and wounded, while a third of the rank and file were placed *hors de combat.* Of the twenty cannon dragged by hand with the great British column, fifteen were captured by the Brigade; the Regiment of Bulkley also captured a pair of colours, which they claimed to have belonged to the 2nd Regiment of Foot Guards (the Coldstream), a regiment which much distinguished itself and suffered very heavily in the battle. It is interesting to note that in the day of victory at Fontenoy, as in that of defeat at Ramillies, some 39 years earlier, the only colours of the enemy the French Army had to show were captured by the Irish troops—at Ramillies by the Regiment of Clare, at Fontenoy by the Regiment of Bulkley. The King next day visited the Irish camp and personally thanked each Regiment for its services to him. Lally

[1] History of the Irish Brigades in the Service of France. By J. C. O'Callaghan.

was promoted to Brigadier by the King on the field after the battle, and at the same time he conferred the command and proprietorship of the Dillon Regiment on Count Edward Dillon, brother of the late Colonel, who had fallen gloriously earlier in the day while heading the charge, and many marks of distinction and favour were bestowed on the Brigade, including promotion for the senior officers and considerable pensions and gratuities to both officers and men.

The loss of the Allies amounted to nearly 8,000 killed, wounded, and missing, with 2,000 prisoners, forty guns, nearly all their artillery, while that of the French was something over 7,000 men.

The result to the French of this important victory was the surrender of the city and citadel of Tournai on the 23rd May and 20th June respectively; this success was followed up by the capture of the important towns of Ghent, Bruges, Oudenarde, Ostend, Nieuport, and Ath. In all these operations the Brigade took part, and distinguished itself by its intrepid behaviour. Among the spoil captured at Ghent, which was an important depôt of the Allies, was a large quantity of new clothing and equipments for the English regiments which, by order of the King, on the suggestion of the Count d'Argenson (Minister of War) and the Marshal de Saxe, was distributed gratis to the six Irish Regiments.

In September of that year the Brigade was detached from the Army in Flanders and distributed along the coast between Dunkirk and Boulogne, in readiness to support, by a descent on England, the cause of the Pretender, Charles Edward Stuart, who had returned to Scotland in July. The contemplated expedition, however, never came off, although detachments from each regiment, with a considerable number of officers, were permitted to embark for Scotland in December and January of the following year, where they shared the fate which overtook the unfortunate Prince and his gallant followers on the field of Culloden.

Dillon's wintered at Boulogne, and in the spring of 1746 rejoined the army, but the Brigade generally had been so weakened materially by the loss of the officers and men who had been allowed to proceed to Scotland, that for the greater part of the summer the Regiments were employed in garrison duty, so as to give them time to refill their depleted ranks. The Marshal de Saxe, however, was not idle, taking advantage of the diversion caused by Prince Charles, he invested in turn and reduced Brussels, Antwerp, Mons, Charleroi, and Namur, and on the 11th October he defeated the Allies at Rocoux, near Liège, who lost some 5,000 men and many of their guns. In this action Dillon's, which seems to have again recruited to its full strength quicker than the rest of the Brigade, took a distinguished part. The victory, however, was attended with no solid advantage to the French, and both Armies after it went into their winter quarters.

(To be continued.)

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Captains—A. W. Paget, C.M.G., to "Scylla," as Commodore, 2nd Class, for Newfoundland Fisheries; H. Lyon to "Trafalgar"; H. T. Hibbert to "Latona"; E. P. Ashe to "Argonaut"; E. R. Pears to "Blenheim"; J. E. C. Goodrich, M.V.O., to Command of Western Coast-guard District; M. Culme-Seymour to "Vulcan"; R. F. Phillimore to "Victory"; P. F. Tillard to "London"; Hon. R. F. Boyle, M.V.O., to "Albion"; C. F. Thursby to "Encounter"; A. T. Stuart to "Donegal"; F. E. Brock to "Triumph"; R. G. Frazer to "Ramillies"; H. P. Williams to "Goliath"; E. E. Bradford to "Exmouth"; H. H. Campbell, M.V.O., to "Terrible"; N. C. Palmer to "Highflyer"; O. de B. Brock to "Bulwark"; F. C. D. Sturdee, C.M.G., C.V.O., as Chief of Staff in Mediterranean; W. E. Goodenough to "Britannia"; R. E. Wemyss, M.V.O., to "Racer," for Command of R.N. College, Osborne, etc.; D. A. Gamble, M.V.O., to "Implacable"; F. W. Fisher to "Canopus"; E. S. Fitzherbert to "Barfleur." Commander—H. H. Bruce to "Terror," in Command and in Charge of Naval Establishments.

Vice-Admiral Lord Charles Beresford, K.C.B., hoisted his flag on board the "President" on the 1st inst., on appointment as Commander-in-Chief of the Mediterranean Fleet; his Lordship's flag was struck at sunset. He will proceed to Genoa at the end of this month, and will take over the command of the fleet on 4th June from Admiral Sir Compton Domvile, G.C.B., G.C.V.O., either at Malta or Genoa, as may be arranged.

Vice-Admiral Sir A. Moore, K.C.B., C.M.G., hoisted his flag on board the "Cæsar" at Devonport as Second-in-Command of the Channel Fleet on the 9th inst., in succession to Rear-Admiral C. J. Barlow, D.S.O. The change is of more than ordinary interest, as it increases the status of the Second-in-Command of this fleet from a Rear-Admiral's to a Vice-Admiral's appointment.

Vice-Admiral Bosanquet, with his flag flying in the first-class cruiser "Ariadne," arrived at Portland on the 24th ult. with the Particular Service Squadron, consisting of the first-class cruisers "Gibraltar," "Hawke," and "St. George"; the first-class cruiser "Edgar" is to take the place of the "Gibraltar."

The new first-class battle-ship "Commonwealth" commissioned at Portsmouth on the 1st ult. for service with the Atlantic Fleet. The first-class battle-ship "Vengeance" recommissioned at Colombo on the 4th ult. for a further term of service in China; she left Colombo on the 7th ult. to return to her station, the "Barfleur," with her relieved crew, leaving for England on the following day. The first-class battle-ship "London" arrived at Portsmouth on the 13th ult. from the Mediterranean; she paid off on the 25th ult., recommissioned on the following day, and left Portsmouth again on the 8th inst. to return to the Mediterranean.

The first-class battle-ship "Goliath," belonging to the Chatham Reserve Division, and the "Canopus," another ship of the same class, which has been doing duty as the flag-ship of the Portsmouth Reserve Division, having completed to their full complement, left Portsmouth on the 11th inst. for China to relieve the "Ocean" and "Centurion" respectively on that

station, but it is understood that neither of these two ships will leave the station to return home during the present critical condition of affairs in the Far East.

The second-class cruisers "Scylla" and "Latona," employed as drill-ships for the Royal Naval Reserve at Harwich and Kingstown respectively, have been appropriated, with the first-class gun-boat "Ringdove," for the Newfoundland Fisheries Protection Duties. Commodore A. W. Paget, C.M.G., has hoisted his broad pennant on board the "Scylla," and the three ships left at the end of last month for Halifax.

The third-class cruiser "Amethyst" commissioned on the 1st ult. for the Atlantic Fleet, and left on the 11th ult. for Lisbon and Gibraltar. The third-class cruiser "Tauranga," from Australia, paid off on the 11th ult. at Portsmouth, and is to be sold out of the Service.

Distribution of Fleets and Squadrons.—The Explanatory Statement of the First Lord of the Admiralty. Part II. "Statement of Work, 1904-05," etc., is a detailed review of the work accomplished in the various departments during the past administrative year, and the further fuller information relating to the new "Distribution of Fleets and Squadrons" may be of interest:—

THE FLEETS AND SQUADRONS.

Of the changes which have taken place in the composition of the Fleets much information had previously been given in the First Lord's Memorandum on distribution and mobilisation. The battle-ship squadron in the Mediterranean now consists of eight ships of the "Formidable" class. The cruiser division has been re-named the Third Cruiser Squadron, and consists of the four armoured cruisers "Leviathan," "Aboukir," "Suffolk," and "Lancaster." There is also on the station a homogeneous squadron of four second-class cruisers of the "Talbot" class. The third-class cruisers and the torpedo gun-boats are in process of withdrawal, and will be replaced on the station by four of the new scouts as soon as they are ready. The number of destroyers on the station has been brought up to 40. In consequence of the formation of the Particular Service (Fourth Cruiser) Squadron, great changes have been made on the North America Station. The "Ariadne," the flag-ship on the station, has become the flag-ship of the new squadron, and will be succeeded by the "Edgar." It is intended to send out the "Diamond," a third-class cruiser, and, in the absence of the Fourth Cruiser Squadron, the commanding officer of this ship will carry out the duties of Senior Naval Officer on the station, all the other vessels being withdrawn. In China no change has taken place in the battle-ship squadron, which consists of four ships of the "Canopus" class, with the "Centurion." The armoured cruisers on the station are the "Hogue" and the "Sutlej." There is also a cruiser division consisting of the "Andromeda," "Bonaventure," "Iphigenia," and "Astræa." Nine shallow-draught steamers are employed on the station in the Chinese rivers, and there are also eight destroyers. The third-class cruisers, sloops, and gun-boats have either been withdrawn without relief or are laid up at Hong Kong. On the Australian station the second-class cruiser "Challenger" has been added to the squadron, and part of her naval crew is being gradually replaced by the entry of Colonials. The "Encounter," on completion, will also be added to this squadron. The third-class cruiser "Pylades" and the sloop "Mutine" will be relieved by the "Prometheus" and "Pegasus," vessels of more modern type. Similarly in the East Indies, the "Pomone" is

to be relieved by the "Proserpine"; and on the Cape of Good Hope station, as on the others, the third-class cruisers and sloops have either been withdrawn, paid off and laid up, or replaced by more modern vessels.

The Home Fleet has been re-named the Channel Fleet, and now consists of two fast divisions, composed of six "Duncans" and two "Swiftsures," and one slower division of four "Royal Sovereigns," to be presently replaced by four "Majestics," from the Atlantic Fleet. In addition to the First Cruiser Squadron, the "Dido" and "Topaze," two smaller cruisers, are attached to this fleet, to which will be added two of the new scouts when these are ready. The Atlantic Fleet, which was formerly called the Channel Fleet, now consists of eight battle-ships of the "Majestic" class. Four of these ships will be relieved by the first four ships ready of the new "King Edward VII." class, thus permitting four "Majestics" to be transferred to the Channel. The Second Cruiser Squadron has been affiliated to the Atlantic Fleet, to which are also attached two smaller cruisers, the "Doris" and "Amethyst," and two of the new scouts when ready. At each of the home ports a rear-admiral has been appointed in command of the commissioned ships in reserve, the Fleet Reserve having been abolished, and all ships which were formerly placed in that category being now kept in commission with nucleus crews. The "Endymion," "Theseus," and "Grafton" have been commissioned as gunnery training-ships, the "Royal Arthur" as navigation school-ship. The "Brilliant," "Scylla," and "Latona" have relieved other vessels as the Royal Naval Reserve drill-ships; a number of similar changes have been made in the direction of substituting more modern ships for older ones, and these vessels will in future make periodical cruises either in squadrons or with the Channel Fleet.—*Times.*

Health of the Navy.—Decreased Ratios.—The annual report on the health of the Navy has been issued. It states that the returns for the total force serving afloat in the year 1903 may be considered to be very satisfactory. With a *personnel* increased by 3,500, as compared with the previous year, there are decreases in the ratios of cases, invalidings, and deaths, both as compared with the previous year, and the average for the last six years. The numbers are respectively 85,735, 2,478, and 433, in comparison with 85,769, 2,985, and 590 in 1902. The aggregate number of cases of disease and injury recorded in the year 1903 furnishes a ratio of 831·57 per 1,000, which shows a decrease of 29·56 per 1,000 as compared with the ratio for 1902, also a decrease of 48·06 when contrasted with the average of the last six years. The ratio of cases per 1,000 of force shows a reduction on all stations except the South-East Coast of America, Cape of Good Hope, and the West Coast of Africa, and Irregular Force. The invaliding ratio of the total force, viz., 24·03 per 1,000, shows a decrease of 5·93 as compared with 1902, also a decrease of 6·94 in comparison with the average for the last six years. The highest invaliding rate was on the North America and West Indies station. As regards the death-rate, the ratio per 1,000 was 4·19, showing a decrease of 1·73 per 1,000, compared with 1902, also a decrease of 1·49 when contrasted with the last six years' ratio. The highest death-rate appears on the East Indies station. The total death-rate (4·19) is the lowest recorded since 1856. The death-rate from disease alone was 2·79 per 1,000, which is ·72 less than the previous year. The total force serving afloat, corrected for time, in the year 1903 was 103,100. Arranged according to age in decennial periods the numbers are:—

60,510, or 58·69 per cent., were between 15 and 25 years of age.
32,940, or 31·94 per cent., were between 25 and 35 years of age.
8,310, or 8·06 per cent., were between 35 and 45 years of age.
1,340, or 1·29 per cent., were 45 years and upwards.

The total number of cases of disease and injury entered on the sick list was 85,735, which is in the ratio of 831·57 per 1,000, being a decrease of 29·56 per 1,000 when compared with the previous year, also a decrease of 48·06 per 1,000, as compared with the average ratio of the last six years.

The average number of men sick daily was 3,633·54, giving a ratio of 35·24 per 1,000, and showing a decrease of ·13 per 1,000, compared with 1902, and of 1·56 in comparison with the last six years' average. The total days' sickness on board ship and in hospital was 1,326,244, which represents an average loss of service from disease and injury of 12·86 days for each person, which is ·05 below the ratio of the previous year, also a decrease of ·58 in comparison with the average of the last six years.

The total number of persons invalided was 2,478, which is in the ratio of 24·03 per 1,000, and shows a decrease of 5·93 per 1,000 when compared with 1902, also a decrease of 6·94 in comparison with the average of the last six years. Of the above total, 1,757 persons were finally invalided from the Service (146 of these refused surgical operations), giving a ratio of 17·04 per 1,000 for the whole force, or 70·9 per cent. of the number invalided, thus showing a decrease of 3·7 per 1,000 when contrasted with 1902. The largest increase, namely, 8·23 per 1,000, was on the North America and West Indies station; but a decrease, amounting to 17·23 per 1,000, appears in the invaliding rate of the South-East Coast of America station. The number of deaths was 433, which gives a ratio of 4·19 per 1,000, and exhibits a decrease of 1·73 per 1,000 in comparison with the previous year, also a decrease of 1·49 per 1,000 on the last six years' average.

The average number of entries on the sick list for disease and injury per man was:—On the Home station, ·82; Mediterranean, ·68; North America and West Indies, ·98; South-East Coast of America, 1·06; Pacific, ·76; Cape of Good Hope and West Coast of Africa, 1·1; East Indies, 1·12; China, ·89; Australia, ·68; and irregular force, ·96. In the total force the average per man was ·83, a decrease of ·03 in comparison with 1902. The Mediterranean station shows the lowest sick-rate and the irregular force the highest. The ratio per 1,000 of men sick daily on the various stations was:—On the Home station, 38·43; Mediterranean, 24·71; North America and West Indies, 37·1; South-East Coast of America, 41·05; Pacific, 27·52; Cape of Good Hope and West Coast of Africa, 36·05; East Indies, 36·72; China, 32·14; Australia, 30·8; and the irregular force, 43·63. The average ratio of sickness for the total force was 35·24 per 1,000, which is a decrease of ·13 per 1,000 as compared with the preceding year.

The total number of persons invalided was 2,478, of whom 2,314 were invalided for disease and 164 for injury. The ratio of invaliding for disease alone was 22·44 per 1,000, and for injury 1·59 per 1,000. There has been an increase in the invaliding as compared with the previous year on the North America and West Indies, Pacific, and Australia stations, also in the irregular force.

Steam Trials.—The new first-class battle-ship "Dominion," built and engined by Messrs. Vickers, Sons, and Maxim, at their works, Barrow-

in-Furness, and supplied with armour and ordnance from their works at Sheffield, has completed her steam trials, which were of special importance, as she was the first vessel to be tested under the new conditions laid down by the Admiralty with the view of ensuring that the arrangements on board will correspond with those obtaining in war time. The engine-rooms were completely closed in, ventilation being entirely mechanical, and the doors of communication were closed. The contractors' staff was limited to an equivalent to the service complement, and no extra water for bearings or oil for lubrication was allowed to be used. These latter stipulations, along with certain mechanical restrictions, are being introduced because it has been urged as an explanation of ships failing to realise on service the results obtained on contractors' trials that there has been disparity between trial and commission conditions. It is proposed to make these conditions applicable under contract in all ships when ordered in future; but it is also in contemplation to induce builders of ships already ordered to comply with the same terms, although there is no such requirements in their contract. The Vickers Company have been the first to make the important experiment, and the result has been to establish the feasibility of complying with the new conditions, provided the staff is thoroughly experienced and vigilant in supervision.

Ten years ago a change was made in the duration of British war-ship trials; then the continuous steaming speed (usually regarded as at three-fourths of the total power) was only required for four hours, while in the succeeding four hours full speed had to be maintained. But it was arranged then, when water-tube boilers were introduced, that following upon the 30 hours' trial at one-fifth, or cruising power, there should be a 30 hours' trial at 75 per cent. of the total power, with an 8 hours' run at full power. At the beginning of the new system a day or two usually elapsed between each trial; but with the "Dominion," as in one or two earlier ships, the intervals were only a few hours—7½ hours in one case and 20 hours in the other. The trials specified by foreign Navies are, says *Engineering*, less stringent. In the United States the full power trial is only 4 hours' duration, and there is in addition a 24 hours' trial at 66 per cent. of the full power. In France the full-power trial is of the same duration as those for the British Navy, with a 24 hours' trial at cruising speed. In the case of Japan there is a full-power trial of 6 hours, including four runs over a course of at least 10 miles; in Russia there is a run of from 2 to 6 hours' duration at full power, and with the coal consumption carefully measured. There is also a trip of 2 to 6 hours at quarter power, the coal consumption being noted to determine the radius of action. Between the two runs the fires may be cleaned, but the engines and boilers must not be touched. For the large ships of the German Navy the conditions of trial are usually:—1. One 6 hours' run at maximum capacity. 2. One 24 hours' run at seven-tenths full power, the coal burned being weighed. 3. One 24 hours' run at about two-tenths full power, and with the coal weighed.

The trials of the "Dominion" were carried through in record time, only a few hours' interval separating each test. On the 30 hours' trial at one-fifth power the engines worked at 77·8 revolutions and indicated 3,889-H.P.; the coal consumption was 1·65 lbs. per I.H.P. per hour; while the speed of the ship by log was 12·8 knots. On the succeeding 30 hours' trial, at what is known as continuous cruising speed, the boiler pressure was 243·8 lbs. per square inch, the vacuum 26·5 inches, while the port engine, running at 113·7 revolutions, developed 6,375-I.H.P., and the starboard engine, running at 113·9, developed 6,468-I.H.P.; the collec-

tive H.P. was thus 12,843. The consumption of coal was 1·68 lbs. per I.H.P. per hour, and the speed by log was 18·3 knots. This speed was also confirmed by the results obtained on the measured mile at the full-power trial of eight hours' duration. The speed attained, as an average of several runs over a long sea course in the Firth of Clyde, was 19·50 knots. The results of the engine performance were as follows :—Steam pressure, 248 lbs.; vacuum, 25·8 inches; revolutions of starboard engine, 125·80; port engine, 125·5; power of starboard engine, 9,270-I.H.P., of port engine, 9,168-I.H.P.—together, 18,438-I.H.P.; the consumption of coal was 1·77 lbs. per I.H.P. per hour. The engine-room staff on the 30 hours' trial was limited to 22, and on the full-power trial to 29.

The first-class battle-ship "Hindustan," which was launched from the yard of Messrs. John Brown & Co., Clydebank, on December 19th, 1903, has also just completed her official trials, the results of which are given below. The "Hindustan," the third of the modern British battle-ships built at Clydebank, is of the "King Edward VII." class, with a total length of 425 feet, and a beam and draught of 78 feet and 26 feet 9 inches respectively. Her displacement is 16,350 tons, and her engines, also constructed by the builders of the vessel, are designed to indicate 18,000-H.P., giving a speed of 18·5 knots. She is fitted with eighteen boilers of the Babcock and Wilcox type and three of the cylindrical type. Her normal bunker capacity is 950 tons of coal, and the entire complement will consist of 800 men and officers.

Official Steam Trials of H.M.S. "Hindustan."

Nature of trial	30 hours at 3,600-I.H.P.		30 hours at 12,600-I.H.P.		8 hours at 18,000-I.H.P.	
	Forward.	Aft.	Forward.	Aft.	Forward.	Aft.
Draught of water	26 ft. 3 in.	27 ft. 2 in.	26 ft. 5 in.	27 ft. 5 in.	26 ft. 4½ in.	27 ft. 2½ in.
Speed of ship	By log, 11·8 knots.		Mean of 6 measured miles, 17·7 knots.		On measured course, 19·01 knots.	
Steam pressure in boilers ...	149 lbs. per sq. in.		191 lbs. per sq. in.		190 lbs. per sq. in.	
Air pressure in stokeholds...	0·09 in.		0·15 in.		Water-tube boiler rooms ·5 in. Cylindrical boiler rooms ·7 in.	
	Starboard.	Port.	Starboard.	Port.	Starboard.	Port.
Vacuum in condensers ...	25½ in.	25¾ in.	26·7 in.	26·6 in.	27·1 in.	27 in.
Revolutions per minute ...	71·9	72	108·8	107·5	120·4	120·7
Mean I.H.P. High	818	762	2,228	2,008	2,867	2,863
Mean I.H.P. Intermediate ...	641	690	2,252	2,195	2,740	2,779
Mean I.H.P. Low, forward ...	194	213	1,074	1,047	1,825	1,813
Mean I.H.P. Low, aft... ...	194	206	1,077	1,045	1,809	1,825
Total	1847	1871	6,631	6,295	9,241	9,280
Grand total	3,718		12,926		18,521	
Consumption of coal per I.H.P. per hour ...	1·94 lbs.		1·76 lbs.		1·8 lbs.	
Water consumption per I.H.P. per hour ... Main engines	15·1 „		15·2 „		17·2 „	
Water consumption per I.H.P. per hour ... All purposes	20·18 „		17·61 „		18·3 „	

—*Engineering.*

FRANCE.—The following are the principal appointments which have been made: Vice-Admirals—M. E. de Maigret, F. E. Fournier, to be Members of the Superior Council of the Navy. Rear-Admirals—R. D'Abnour, J. A. Philibert, to be Members of the Superior Council of the Navy. Capitaines de Vaisseau—R. M. Amelot to be Director of Submarine Defences at Brest; P. Gervaise to "Amiral Aube." Capitaines de Frégate—H. C. R. de Martel to Command of 1st Submarine Flotilla of the Mediterranean; J. B. Baude to "Bombe" and 1st Torpedo-boat Flotilla of the Channel; O. P. Lauwick to "Dragonne" and 1st Torpedo-boat Flotilla of the Mediterranean; M. P. Jaurès to Command of Fixed Defences at Toulon.—*Journal Officiel de la République Française.*

Trials of the "Léon-Gambetta."—The repairs of the new first-class armoured cruiser "Léon-Gambetta," rendered necessary by her mishap last month, have been rapidly carried out, and she has now at last successfully completed her trials, which were interrupted more than a year ago by the injuries the ship sustained through striking a pinnacle rock when steaming at high speed. The first trial was a preliminary one, and lasted eleven hours; only the central engine and four boilers were used, the results being satisfactory. The second preliminary trial was at high speed, the engines having to develop 25,000-I.H.P., or nine-tenths of her full power; this trial was for two hours, and the results were very satisfactory, the engines developing 26,200-I.H.P., 1,200 in excess of contract, the mean speed being 22·1 knots. During the twenty-four hours' coal-consumption trial, the engines developed 16,911-I.H.P., giving a speed of 20·4 knots, with a coal consumption of 761 gr. (1·52 lbs.) per H.P. per hour. At the three hours' full-speed trial the engines developed a maximum of 30,500-I.H.P., or 3,000-H.P. over the contract, and a mean of 29,008-H.P., giving a maximum speed of 24 knots—two knots over the contract—and a mean of 23·1, with a coal consumption of 176 kg. (387·9 lbs.) per square metre of grate surface; the boilers of the large-tube Niclausse type worked most satisfactorily the whole time. The "Léon-Gambetta" has thus proved herself the fastest cruiser as yet built for the French Navy, and she is the first large cruiser of the 12,600 type of the 1900 programme, brought in by M. de Lanessan, to be completed.

The Stranding of the "Sully."—The hopes of saving the "Sully" do not as yet appear to have been completely abandoned. It seems that the Danish Salvage Co. at Hong-Kong, who were first approached, would not undertake the work, not because they doubted their ability to float the vessel, but because their hands were already full in carrying out their contract with the Japanese Government for salving the sunken ships at Port Arthur. A large cofferdam has been built at Hong Kong, and is now being towed to the scene of the wreck, when fresh attempts to lift her from the two pinnacles of rock, on which she seems to be hung amidships, will be made. The fore part of the ship is submerged up to the turret, and she has a strong list to port, as the two rocks on which she is hung are of unequal height.

The Debate on the Naval Estimates. — Speaking in the Chamber in the recent debate on the Naval Estimates for the current year, M. Deloncle, the well-known Deputy for Indo-China, urged the absolute necessity of steps being immediately taken for placing Indo-China in a satisfactory state of defence. The *Temps* holds that some of his views may

be open to dispute, but that a general agreement exists on the point that one of the lessons of the Russo-Japanese war is to show that the French Colonies in Asia can only be defended by sea power. "As a preparation for defence," continues the *Temps*, "two pressing needs are clearly indicated: — 1. The maintenance of a fleet capable of maintaining itself against the naval forces of the presumed enemy, which is the business of the mother country, as this fleet can only be a portion of the national one. 2. The organisation of a war port which can, in Indo-China, furnish the fleet when it is there with all necessary resources for repairing and completing with stores, and that is the business of the colony.

"This port has for a long time been fixed at Saïgon, and although to-day its equipment is far advanced, it is by no means complete. And until it is completed we remain in a state of disastrous inferiority in case of a naval war. The recent mishaps to the "Chateaurenault" and "Sully" have drawn attention to some of its deficiencies. The stores of provisions, munitions of all kinds, etc., and coals are only sufficient for the needs of the small naval division at present stationed in Far Eastern waters; a larger force would absorb them in a few weeks, with no means of replacing them. At present it would only be possible for the fleet to keep the sea for a short time, for fleets cannot steam without coal. There ought at least to be over 100,000 tons of coal in store, but at the present time, in accordance with the Regulations, there are only 11,000 tons. The measures for repairing ships are no less insufficient. There ought to be a repairing basin for large ships, and a dock at least 600 feet long. The necessary work-shops are quite insufficient, while too often the plant and *matériel* sent out are obsolete, and have been condemned for the home yards—a most foolish policy, as it stands to reason that in a distant country, where means are limited, everything provided should be of the best, so as to ensure attaining the very best results possible. In addition to the completing the dockyard, M. Deloncle wishes to install a *défense-mobile* of torpedo-boats and submarines at five different points along the twelve hundred miles of the Indo-Chinese coast. But, in regard to this, there is a considerable difference of opinion existing among experts. Many officers consider that in a naval war all the units should be available for use in battle, so that they may contribute to victory; and they consider that the system of distributing torpedo-boats among *défense-mobile* stations is only another edition of the oft-condemned system of *petits paquets*. It is a useless expenditure of money and strength. Two more battle-ships on the spot when combat is joined will be of far more value than a number of small vessels distributed along the coast and left to themselves.

"And it certainly appears that these views as to the use of large and small vessels in war are beginning to be generally held. In any case it is a question for experts. And M. Deloncle himself would seem to be of this opinion, as he has demanded the appointment of a committee to go into the whole question connected with the defence of Indo-China, viz., the completion of the port of Saïgon; the providing a port of refuge on the northern coast of the territory; the *défense-mobile*; the recruiting from among the native population for men for service afloat; the creation of a naval command for Indo-China, independent of the command of the squadron in the Far East; and the subordination of this command to the Governor-General."

The *Temps* concludes with expressing the opinion that such a committee should be appointed and get to work quickly.

The *Yacht* also calls attention to the necessity which exists for strengthening the defences of Indo-China, more especially in view of a possible attack by the Japanese. "We possess in Indo-China," writes this important naval organ, "only one *point d'appui*, which is not only insufficiently equipped, but is also extremely badly defended. The torpedo-boats of the *défense-mobile* are few in number, while it is doubtful if the two submarines, the 'Lynx' and 'Protée,' will prove of any practical value owing to the turgid nature of the waters of the Saïgon river; and it must not be forgotten that it was not the Russian torpedo flotilla which prevented Togo's squadron approaching Port Arthur, but the heavy batteries and the battle-ships. The three mouths of the Saïgon river are far from being equally well protected; one of them is notoriously free from all obstacles, and admits of a vessel steaming right up to the arsenal and dockyard. It was intended last year to spend some two millions (francs) on the defences of Indo-China. It is quite insufficient, and if our only *point d'appui* is to be adequately defended against a *coup de main*, much more must be done. At Hanoi, Haiphong, Port Courbet, and Quang-Tcheo-Ouan there are no fortifications worthy of the name, no *défense-mobile*, dock, or even a proper coal depôt.

"The Squadron of the Extreme East, as it is pompously called, consists of three armoured cruisers, the 'Montcalm,' 'Amiral Gueydon,' and 'Sully,' one first-class cruiser, the 'Guichen,' and two second-class, the 'D'Assas' and 'Descartes,' both of which are now old vessels, with six new destroyers. The Reserve Division is composed of the obsolete second-class battle-ship 'Redoutable' and two armoured gun-boats, none of them being fit to attempt fighting at sea.

"So that in fact the available squadron only really consists of the three armoured cruisers named above, the 'Guichen,' and the six destroyers. Commanded by energetic and young officers, these vessels could perhaps make one or two cruises similar to those made by the Russian Vladivostok Division; but their career would be short, for they would be pursued by the whole Japanese fleet, whose armoured cruisers alone, leaving on one side the battle-ships, are individually superior to those forming our squadron, being better protected and much more powerfully armed. But public opinion in France, quite ignorant of the real state of affairs, would insist on our ships putting to sea to meet the Japanese, at whose hands they would meet with a crushing disaster.

"It would seem to be necessary that France should maintain in Eastern waters a battle squadron strong enough, if necessary, to deal at once with the Japanese fleet. In order to have our fleet concentrated at the opportune moment, we must take in hand some such scheme of organisation as has been lately carried into effect in England. First, the Squadron of the North should be kept fully manned all the year round. An armoured squadron should be constituted in the Indian Ocean, with its base at Diego Suarez, and it would seem to be indispensable to organise on a permanent footing all the vessels necessary for the auxiliary services of the fleet. Finally, it will be necessary to properly fortify our coaling stations along the route to China, to convert Diego Suarez and Saïgon into real dockyards, each with a couple of dry docks and the necessary plant for effecting repairs on a large scale, as well as a proper reserve of stores of all kinds, which will be required by a fleet, and perhaps create another naval base, should circumstances call for it, at some point on the coast of Tonquin. The need is pressing, and it is time the Government should make up its mind."—*Le Yacht, Le Moniteur de la Flotte*, and *Le Temps*.

JAPAN.—*The New First-Class Battle-ship "Kashima."*—The first-class battle-ship "Kashima," building by Sir W. G. Armstrong, Whitworth, & Co. (Limited) for the Imperial Japanese Navy, was launched on the 22nd March from the Elswick Shipyard of this firm. Her principal dimensions are as follows:—Length of the vessel on the water-line, 455 feet; beam, 78 feet 2 inches; draught, 26 feet 7¼ inches, on a displacement of 16,400 tons.

The disposition of the armour protection adopted in the latest and most powerful battle-ships has been followed in this vessel. The armour amidships is carried from below the water-line up to the upper deck. Above this deck additional protection is afforded by a 4-inch screen rising to a height of 7 feet 6 inches above the upper deck, covering the 6-inch gun positions amidships as well as the spaces between the 10-inch gun positions. The main armour belt has a thickness of 9 inches for more than half her length, and extends the whole length of the vessel, tapering slightly at the extremities. This belt extends to 5 feet below water and 2 feet 6 inches above water. Surmounting it is a belt of armour extending in length from the after 12-inch barbette right forward to the stem. This belt is 6 inches thick amidships, and tapered slightly towards the stem. Immediately above this 6-inch belt is the 6-inch citadel armour, reaching to the upper deck, and enclosing the two 12-inch barbettes. Within this citadel are placed ten of the 6-inch guns, separated from each other by screens of 80-lb. armour plating; these guns fire through ports similar to those in casemates. The other two 6-inch guns fire through similar ports in the 4-inch screen armour on the upper deck amidships. The barbette armour of the 12-inch guns has a thickness of 9 inches on the upper or exposed portions, and a thickness of 5 inches where protection is afforded by the citadel armour. The thickness of the 10-inch gun barbette armour is 6 inches, that of the conning-tower armour 9 inches, and the observer tower 5 inches. In addition to these protected positions for commanding officers, two more officers' shelters will be provided of 3-inch armour; these will be placed on the boat deck amidships. The steel protective deck, running throughout the entire length of the vessel, and covering the whole of the machinery, magazines, etc., has a thickness of 2 inches on the flat portions amidships, and 3 inches on the sloping sides. The sides of this deck are carried down and join the bottom of the main armour belt. At the extremities of the vessel where the armour protection is reduced, this deck is 2½ inches thick all over. Further protection is given to the upper structure of the vessel by thick protective plating worked on top of the screen armour at the level of the boat deck.

The main armament will comprise four 12-inch guns, twin mounted in barbettes, four 10-inch guns mounted singly in barbettes, twelve 6-inch guns carried in the citadel, twelve 12-pounder guns, six Maxim guns, three 3-pounder, and five torpedo tubes. The 12-inch guns will weigh approximately 59 tons each; the length is 46 feet 9½ inches (46·7 calibres); the weight of the projectile is 850 lbs.; the charge will be cordite, probably of the modified type. No armour which any ship can carry can hope to cope with their penetrating power at 3,000 yards. The 10-inch guns will weigh approximately 34 tons each; the length is 39 feet (46·76 calibres); the weight of the projectile is 500 lbs.; the charge will be cordite, probably of the modified type. The penetrating power of these guns is equal to the penetrating power at 3,000 yards of any of the 12-inch guns at present afloat in any Navy. The 6-inch guns will weigh approximately 82 tons; the length is 23 feet 6 inches (approximately 47 calibres); the weight of the projectile is 100 lbs. The disposition of this armament

has been arranged so as to ensure that there will be no interference with one another in the firing of the different guns, each of which possesses a considerable arc of training, the 12-inch guns being 26 feet and the 10-inch guns 22 feet above the water-line, whilst the 6-inch guns in the battery are about 14 feet above the water-line.

Independent magazines are provided for each pair of 12-inch guns and for each 10-inch gun, whilst the 6-inch and smaller Q.F. guns obtain their supplies of ammunition from a passage running right round the machinery spaces below the protective deck. The torpedo-tubes are located in water-tight chambers, two forward and two aft, firing on the broadsides, and one tube firing right astern, also under water. The protection afforded to the engines and boilers of the vessel by the side armour and protective deck is increased by the arrangement of the coal bunkers, which are designed so as to minimise labour in trimming and in getting the coal to the furnaces. In the design of the coal bunkers the chief features aimed at have been:—*a*. To secure an arrangement admitting of quick coaling; *b*. to stow the coal so that it may be easily and expeditiously transferred to the stokeholds; and *c*. to have a large supply of coal available so that when going into action all water-tight doors may be closed and kept closed during action. The full supply of coal has been provided for without using the wings which really form part of the double bottom, so that the difficulties attending the working of the coal into and out of these small spaces are avoided. As regards the longitudinal coal bunkers at the sides of the boiler-rooms and below the protective deck, these also can be kept closed during action, thereby affording additional protection against torpedoes. A significant feature of the coaling arrangements of this vessel is presented by the fact that the bulk of the coal can be brought to the stokeholds without opening any of the doors in the main water-tight bulkheads, whilst in addition to the coal bunkers below the protective deck, reserve bunkers are arranged at the slopes of this deck to the height of the main deck throughout the length of the machinery spaces. The total coal-bunker capacity of this vessel is approximately 2,000 tons, sufficient to ensure a large radius of action.

In consequence of the immense weight of the vessel, which will exceed 17,000 tons with her full equipment of coal, stores, etc., special arrangements for docking her with safety have been provided, consisting of two docking keels on the flat portions of the bottom under the bilges amidships, in addition to the usual shoring ribbons for giving support to the armour whilst in dock. Bilge keels are also provided to reduce rolling in a seaway. A most complete system of water-tight sub-division of the vessel represents another important feature of the design; the inner bottom extends throughout the whole length of the vessel, and is minutely sub-divided, whilst above the inner bottom a considerable number of transverse and longitudinal water-tight bulkheads—designed so as to increase the strength and safety of the vessel—are to be found. In connection with the pumping and draining arrangements of the vessel, there are, in addition to the main pumps in the engine-rooms, which can be used if necessary for dealing with a large inrush of water, two 9-inch pumps, two 5½-inch, and one 4½-inch, besides pumps for fresh and salt water services. Every provision has been made for efficiently ventilating the numerous compartments of the vessel, and where natural ventilation cannot be obtained, artificial ventilation is provided by means of numerous electrical fans, with air trunks, branches, pipes, etc. A refrigerating engine for preserving provisions, etc., is provided, and this engine is arranged in conjunction with an installation of Thermo tanks to regulate the supply of

cold air to the magazines. The ventilation and heating of the living spaces of the vessel are also arranged on the Thermo tank system. The vessel will also possess a most complete and powerful electrical equipment for providing energy for the numerous machines on board, as well as for lighting purposes. The electrical lighting installation will include six search-lights and some 1,250 incandescent lamps.

The vessel will be fitted with two large steel masts, each carrying two tops for the reception of search-lights and of the control of gun-fire apparatus. The anchor and cable outfit includes three stockless bower anchors, each of 120 cwt., and three main cables of 2⅞-inch stud chain, each of 150 fathoms; there are also smaller anchors and cables. The complement of boats will include:—Two 56-foot vedette torpedo-boats of high speed, one 36-foot steam pinnace, one 40-foot launch, one 32-foot pinnace, three 30-foot cutters, and two 30-foot gigs. Two large derricks, worked by four steam winches, will be provided—one at each mast—for lifting these boats. Two complete sets of steering engines, in addition to hand-steering gear, are provided, and suitable appliances for quickly changing from hand to steam gear, and *vice versa*, form part of the installation. Tiller indicators are fitted to all necessary positions. Helm indicators are provided, and an elaborate installation of telegraphs, voice pipes, and telephones is provided; and the vessel will, in addition, be supplied with a wireless telegraphy installation. An efficient arrangement of torpedo-net defence will also be provided around the greater part of the vessel. Accommodation will be provided in the vessel for officers and crew. The total complement will be about 980. The main propelling machinery and boilers are being manufactured by Messrs. Humphrys, Tennant, & Co., London. There are 20 Niclausse boilers, arranged in three separate boiler-rooms; these will have a working pressure of 230 lbs., a grate surface of 1,300 square feet, and a heating surface of 43,000 square feet. The twin engines will have four cylinders, each 36-inch, 56-inch, 63-inch, and 63-inch, with a stroke of 48-inch. The H.P. of the engines will be sufficient to give the vessel a speed of 18½ knots. With the exception of the main propelling machinery and boilers, the whole of the ship, including armour, armament, fittings, etc., will be supplied by Sir W. G. Armstrong, Whitworth, & Co. (Limited).

The "Kashima" is the third first-class battle-ship and tenth war-vessel constructed by Sir W. G. Armstrong, Whitworth, & Co. (Limited) at Elswick Shipyard for the Imperial Japanese Government, in addition to some three or four other vessels of the protected cruiser type built at Walker Shipyard of the firm before the commencement of Elswick Shipyard. The launching weight of the "Kashima" was about 8,000 tons. The first keel-plate of the vessel was laid on 29th February, 1904, but it was not until about a month after that date that uninterrupted progress began with the work of actual construction, so that an exceedingly rapid rate of progress of construction has thus far been maintained.—*Arranged from the "Times."*

United States.—*Launches.*—The following first-class battle-ships were launched in the latter part of last year on the dates and from the yards against their names, respectively:—"Nebraska," on the 7th October, from the yard of Moran Brothers, Seattle, Washington; "Georgia," on the 11th October, from the Bath Ironworks; "New Jersey," on the 10th November, from the yard of the Fore River Shipbuilding Company, Quincy, Mass.

Want of space has prevented our giving details of these ships earlier, but as they are sister vessels, the description of one will do for all, so we

have selected the description of the "Georgia," as given by the *Scientific American*:—

"The launch of the 'Georgia' is remarkable from the fact that she went into the water with her masts and smokestacks in place and steam up—something that has never occurred before on a United States war-ship. The 'Georgia' and 'Nebraska' represent a class of five ships, the others being the 'Virginia,' 'Rhode Island,' and 'New Jersey,' all of which, with the launch of the latter on the 10th November, are now afloat. The description of the 'Georgia,' therefore, will answer for any one of the class, the differences being of a minor character, and chiefly affecting the displacement, which, in the case of the 'Georgia,' is estimated at 14,948 tons when she has all stores on board and a normal coal supply of 900 tons, while that of the other ships rises to 15,000 tons. This fine ship, which is only about 1,000 tons less in displacement than the 'Connecticut,' and 15 feet less in length, is a vessel with a flush main deck, a high free-board, and a lofty command for the guns of her main and intermediate batteries. She is protected by a continuous water-line belt of Krupp armour, with a maximum width of 8 feet, which varies from a maximum thickness of 11 inches amidships to a minimum thickness of 4 inches at the bow and stern. She has also a second belt of side armour, which extends from the forward to the after barbette—a length of some 245 feet—and reaches from the top of the water-line belt to the level of the main deck. This armour is 6 inches in thickness, and at the ends of the armour, 6-inch bulkheads are carried athwartship to the barbettes, to afford protection against end-on fire. The protective deck is 3 inches in thickness on the slopes and 1½ inches on the flat, and at the sides it is curved down to a junction with the lower edge of the water-line belt. A heavy shell from the enemy, therefore, would have to penetrate the main belt and the sloping 3-inch deck, and pass through the mass of coal in the coal bunkers before it could reach the engine or boiler rooms or the ammunition supplies.

"The central broadside battery, formed by the 6-inch walls of armour and their associated bulkheads, contains twelve 6-inch, 50-calibre, Q.F. guns of the latest pattern, arranged six on each broadside. These fire through recessed casemates, and they are provided with semi-circular shields, which are adjusted to close the casemate opening, sufficient space only being left between the semi-circular shield and the casemate to give clearance when the gun is being traversed. Upon the same deck, forward in the bows, are four 3-inch Q.F. guns, firing through casemates that are protected by 2 inches of armour. Four guns of the same calibre are mounted near the stern on the same deck, and behind similar protection. Forward and aft of the central battery are the two barbettes for the main turrets. These are protected by 10 inches of Krupp armour in front and 7½ inches in that portion that lies within the bulkheads of the central battery. The turrets that are mounted above these barbettes are of the superposed or double-deck type, carrying a pair of 12-inch 40-calibre guns on the lower deck, and a pair of 8-inch 45-calibre guns on the upper deck, the lower portion of the turret being protected by 12 inches of Krupp armour, and the upper portion by 8 inches of armour.

"The 'Georgia' class are the ships regarding whose armament there was so much discussion in our Naval Board on Construction; the present design was adopted as a compromise, and it is probable that these are the last ships on which the double turret will be mounted. The chief objection to the type is that four guns might be put out of action by

a single shot; moreover, the firing of any one gun of the four has a disturbing effect upon the sighting of the other guns in the turret. In addition to the four 8-inch guns carried in the double-deck turrets, there are four others carried in pairs in two barbette turrets, protected by 8 inches of armour and placed on either broadside. These 8-inch guns are sponsoned out sufficiently to give them a line of fire dead ahead and dead astern. Within the superstructure on the main deck are mounted four 3-inch Q.F. guns, protected, like those on the main deck, by 2 inches of casemate armour. There are 9 inches of Krupp steel on the forward conning tower, and 5 inches on the after conning tower, generally known as the signal tower.

"It will be seen from this description that the concentration of fire is very heavy, consisting of two 12-inch, six 8-inch, and four 3-inch ahead and astern, while the broadside consists of four 12-inch, six 8-inch, six 6-inch, and six 3-inch guns. There is no ship afloat that can compare with this in intensity of fire, even the 'Connecticut' and 'Louisiana' having less by a pair of 8-inch guns. The arc of fire is also very satisfactory, the 12-inch guns having 270°, the 8-inch superposed guns 270°, the 8-inch guns amidships 180°, and the 6-inch 110°. The ammunition hoists are electrically operated, and they are designed to supply the various guns at a slightly faster rate than the maximum rate of fire. The ammunition supply consists of 240 rounds for the 12-inch; 1,000 rounds, or 125 per gun, for the 8-inch; 2,400 rounds, or 200 per gun, for the 6-inch; and 3,000, or 250 per gun, for the 3-inch pieces. The battery of smaller guns consists of twelve 3-pounders, four 1-pounder automatics, two Gatlings, and six Colts. There are two submerged torpedo-tubes carried in the forward part of the ship. The motive power consists of two sets of four-cylinder triple-expansion engines of a designed I.H.P. of 19,000, under which the vessel is designed to make on trial 19 knots an hour; her estimated steaming radius at 10 knots is 3,825 knots. The 'Georgia' and 'Virginia' will have 24 water-tube boilers of the Niclausse type, while the three other ships will have 12 Babcock and Wilcox. The grate area will be 1,280 square feet, and the heating surface, 55,000 square feet. The maximum supply of coal is 1,704 tons, and the complement of officers and men is 812. Total weight of ammunition, 400 tons; total weight of powder, one round, 3,200 lbs.; total weight of shot, one round, 7,100 lbs.; total weight of armour, 3,600 tons; total weight of armament, 800 tons; total weight of coal, 1,950 tons; complement, officers, 40 crew 772, including 60 marines."

Launch of the "Simon Lake X." — The submarine torpedo-boat "Simon Lake X." was launched from the Newport News Shipbuilding and Dry Dock Company at Newport News, Va., on 27th October, 1904. The vessel entered the water perfectly. She is a distinct advance upon her predecessors, and has been built to compete for the $850,000 provided by the last session of Congress, none of which can be expended until after exhaustive competitive and comparative tests.

The new boat was launched in the presence of a distinguished gathering of the Army and Navy, the national legislature, and a number of greatly interested foreign attachés.

This is one of the five submarines building for the Lake Company, and is sister to the boats recently taken to New York in sections on board the barge "Kennebec," and about the destination of which there appears to be much mystery.

The "Simon Lake X." belongs to the same class as Captain Lake's "Protector," which was sold abroad. Her dimensions are:—Length,

68 feet; beam, 11 feet 6 inches; displacement about 160 tons. She is equipped with two gasolene engines of 125-I.H.P. each, and has two electric motors of 75-H.P. each. She has twin screws, and her armament will consist of five Whitehead torpedoes. Her estimated speed is:—Surface, 9 knots; submerged, 6 knots. She has cooking and sleeping facilities for eight men. She will submerge on an even keel in contra-distinctio ı to the diving type of submarines, by the use of Captain Lake's system of hydroplanes. She has great longitudinal stability, and is a sea-going vessel with a high armoured conning tower, and has a sighting hood for semi-submerged condition, and has Captain Lake's omniscope, which gives a complete all-round view of the horizon when entirely submerged.

Propelled by electric motors when completely submerged, and directed by compass when between the bottom of the sea and its surface, a diving chamber permits divers to emerge from the vessel when resting on the bottom on wheels, and allows divers to mine, counter-mine, and cut cables when completely submerged. Anchor weights enable "Lake" submarines when on picket duty to rise and descend like an elevator in a building.

At a moment's notice, the "Simon Lake X." will be able to instantly fire two of the Navy's big 18-inch Whitehead torpedoes, and, in the brief time it takes her to swing in half a circle, she can bring the stern tube to bear. In practice, with a deal of complex mechanism, the best record that has been made in the presence of a Naval Board has been two single discharges from a submarine in ten minutes, starting with the tube loaded.

The boat has several safety devices. There is a five-ton emergency weight in the keel that can be instantly let go; the two anchoring weights, each weighing half a ton, can be let loose on a run; and, should these fail to bring the boat to the surface, it being supposed for the time that the pumps and air control of water in the ballast tank are halted, the diving chamber will become a means of reaching the surface.

The work on the new boat is so far advanced—her engines and motors being in her—that she will be ready for trial by a Government Board shortly.—*Scientific American* and *Army and Navy Journal*.

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR APRIL, 1905.

Major-Generals.—The under-mentioned Major-Generals are promoted to the rank of Lieut.-General in the Army, viz.: Major-General C. J. Burnett, C.B., Major-General Sir H. M. L. Rundle, K.C.B., K.C.M.G., D.S.O., Major-General E. P. Leach, V.C., C.V.O., C.B., Major-General Sir G. de C. Morton, K.C.I.E., C.V.O., C.B., Major-General F. G. Slade, C.B., and Major-General C. W. H. Douglas, C.B. Major-General M. H. Saward to be Colonel-Commandant of Royal Artillery.

Colonels.—Colonel W. J. Mackenzie, from Assistant Director at Headquarters, to be a Colonel on the Staff for Royal Engineers. Colonel J. C. Dalton, from h.p., is appointed a Major-General on the Staff to Command the Royal Artillery at Gibraltar, and promoted to the rank of Major-General. Major and Brevet Colonel Sir J. R. L. Macdonald,

K.C.I.E., C.B., from R.E., to be a Brigade Commander in India, and is granted the substantive rank of Colonel in the Army, with the temporary rank of Brigadier-General, whilst so employed. Colonel J. R. J. Jocelyn, from h.p., to be Commandant of the School of Gunnery.

AUSTRIA-HUNGARY.—*Grand Manœuvres in 1905.* — The *Fremdenblatt* announces that the Imperial Grand Manœuvres will take place this year from the 2nd to the 6th September, in the neighbourhood of Strakonitz, in Southern Bohemia. The following will take part, viz. : The VIIIth (Prague) Army Corps, the IXth (Josefstadt) Army Corps, units from the Ist, IInd, and XIVth Army Corps, as well as 3 pioneer battalions and 1 balloon section, or altogether 88 infantry battalions, 16 cavalry squadrons, 36 field artillery batteries, 4 howitzer batteries, 3 pioneer battalions, and 1 balloon section. The cavalry will be provided, experimentally, with 4 machine gun detachments.

During these manœuvres experiments will also be carried out with wireless telegraphy, an automobile truck, a field kitchen, as well as with the method for employing the Austrian Landwehr Automobile Corps.

New Military Law.—According to certain Austrian journals the draft of a new military law is about to be submitted to Parliament. The annual increase of expenditure resulting from it would amount to 110,000,000 kronen, not including a subsidy, given once and not renewable, of 207,000,000 kronen. The following would be the basis of the law :—

1. Complete introduction of compulsory service for 2 years, excepting for the cavalry, in which the service for 3 years would be retained. All men passed fit for service would, as a rule, be enrolled; the less fit would be attached to the non-combatant branches; those unfit for all service would remain subject to the military tax. The peace effective would remain fixed for 10 years by law under the following headings : Fit for service or combatants; less fit for service or non-combatants, workmen, bandsmen, etc. The Ersatz Reserve would be reorganised. The classification of the Revision Board would be the following :—

   a. Fit for the combatant branches, or 2 years with the colours, with the exception of the cavalry, who would serve for 3 years.

   b. Fit for the non-combatant branches and to be enrolled for 8 or 10 weeks' military instruction, to be followed by 2 years' service in the non-combatant branches of the Service.

   c. Put back, who would have to present themselves for several years in succession before the Revision Board. Those finally not accepted would be drafted into the Landsturm with their class of recruits.

   d. Unfit for service, to be subject to the military tax.

The drawing of lots by the fit and the less fit would only be carried out after the medical examination by an Army doctor.

2. Abolition of the differences existing between the Common Army and the men of the Landwehr. The minimum peace effective would be the same for both of the different portions of the armed forces.

3. Voluntary engagements for 1 year would be retained, but the retention in the Service for a second year, as a disciplinary measure, would be abolished. The facility at present given to enter the Service as one-year Volunteers to pupils of an establishment of secondary education, divided into 8 annual classes, will be extended to youths leaving similar schools whose curriculum only extends over 7 years, viz. : *Oberreal Schule* and *Obergymnasium.*

4. The peace effective would not include one-year Volunteers or re-engaged non-commissioned officers.

5. Youths classified as less fit will undergo their period of service, in peace time, in the non-combatant branches. In this way the innumerable useless men, at present included amongst the combatants, would be reduced.

6. Those condemned for crimes would not be included in the armed forces.—*La France Militaire.*

BELGIUM.—*The Manœuvres for 1905.*—The musketry and manœuvre periods for 1905 have been laid down as follows:—

Grand Manœuvres.—3 divisions of the Army, with all their various services, will carry out manœuvres for 8 days at the camp at Beverloo. The 4th Division will carry out theirs on broken ground, from the 27th May to the 6th June, in the neighbourhood of Arlon; 9,000 francs has been devoted to cover the expenses of these exercises.

Cavalry Manœuvres. — Each of the 2 cavalry divisions will also manœuvre for 8 days at the camp at Beverloo.

Fortress Manœuvres will take place, from the 26th August to the 3rd September, in the fortified positions at Anvers, Liège, Namur, and Termonde.

Before these manœuvres infantry and cavalry regiments will be assembled by divisions or by brigades for 15, 30, or 40 days to carry out their individual and collective firing and for rifle meetings for prizes. It will be at the conclusion of these practices that the grouping by branches of the Service and departments will be completed so as to form the Army or cavalry division.

The artillery will carry out its gunnery at the practice ranges at Brasschæt for periods of 15 days. Field artillery will attend there by half regiments, and fortress artillery by batteries belonging to the fortifications of the Meuse (Namur and Liège) and of the Escaut (Anvers and Termonde).

The engineers will carry out their musketry in detachments at Beverloo or Brasschæt.—*Revue Militaire Suisse.*

Army Budget for 1905.—The Belgian Army Budget for the year 1905 amounts to 54,290,608 francs 49 centimes. The credits are distributed as follows:—

Ordinary Expenditure.	Francs.	Centimes.
Central Administration	684,575	—
Pay and Allowances...	25,399,975	50
Medical Service	910,335	—
Military Schools	240,075	—
Artillery	2,482,000	—
Engineers	1,591,135	—
Commissariat...	17,866,709	31
Various Salaries	427,754	68
Pensions and Aid	392,000	—
Unexpected expenditure	68,949	—
Total...	50,063,508	49
Extraordinary expenditure	4,227,100	—
Grand total...	54,290,608	49

The sum of 3,032,500 francs, from the amount allotted to extraordinary expenditure, is devoted to barrack improvement. The maximum strength of the Army on a peace footing is fixed at 100,000 men, and that of the contingent at 13,300 men. These numbers are the same as in 1904.—*Revue Militaire des Armées Etrangères.*

FRANCE.—*Autumn Manœuvres in 1905.* — The manœuvres for the current year will be regulated as follows:—

I.—*Army Manœuvres.*

Two sets of Army manœuvres will be carried out this year, one in the east and the other in the west.

1. *Eastern Manœuvres.* — The following will take part in these manœuvres, viz.: the Vth, VIth, and XXth Army Corps; the 2nd, 3rd, 4th, and 5th Cavalry Divisions. The artillery of the three army corps will be completed:—For the Vth Army Corps by two brigade divisions of the 19th Artillery Brigade; for the VIth Army Corps by a brigade division of the 1st, and by a brigade division of the 2nd Artillery Brigade; for the XXth Army Corps by a brigade division of the 7th and by another of the 8th Artillery Brigade. The cavalry of the army corps will be reinforced:—For the Vth Army Corps by 2 squadrons of the 8th Cavalry Brigade; for the XXth Army Corps by 2 squadrons of the 7th Cavalry Brigade.

2. *Western Manœuvres.* — The following will take part in these manœuvres, viz.: the IXth, Xth, and XIth Army Corps; the 1st Cavalry Division. The artillery of the three army corps will be completed:—For the IXth Army Corps by a brigade division of the 12th Artillery Brigade; for the Xth Army Corps by a brigade division from the 3rd and by another from the 4th Artillery Brigade; for the XIth Army Corps by two brigade divisions from the 19th Artillery Brigade. The cavalry of the three army corps will be reinforced as follows:—For the IXth Army Corps by 2 squadrons of the 12th Cavalry Brigade; for the Xth Army Corps by 2 squadrons of the 3rd Cavalry Brigade; for the XIth Army Corps by 2 squadrons of the 4th Cavalry Brigade. The latter manœuvres will probably take place in the neighbourhood of Saumur, the concluding parade being held at Montreuil-Bellay, about 15 miles S. of Saumur.

II.—*Division and Brigade Manœuvres.*

Division Manœuvres.—These manœuvres will be carried out in the XIIth, XIIIth, XIVth, and XVth Army Corps and by the 3rd, 5th, and 8th Infantry Divisions.

Brigade Manœuvres.—These manœuvres will be carried out in the Ist, VIIth, VIIIth, XVIth, XVIIth, and XVIIIth Army Corps and by the 7th and 8th Brigades of the IInd Army Corps.

III.—*Camps of Instruction.*

Camps of Instruction will be distributed as follows in 1905, viz.: Sissonne, Ist and IInd Army Corps; Châlons, 6th Division of the IIIrd Army Corps; Mailly, 7th Division of the IVth Army Corps; De la Courtine, XIIth and XIIIth Army Corps.

The VIth, Xth, XIth, and XXth Army Corps, although having camps of instruction in their districts or in their neighbourhood, will not carry out combined evolutions. Exceptionally the 6th and 7th Infantry Divisions will not this year take part in the autumn manœuvres.

IV.—*Cavalry Manœuvres.*

There will be carried out :—1. Combined cavalry manœuvres by the 6th, 7th, and 8th Divisions. 2. Brigade manœuvres by the 1st, 2nd, 7th, 13th, 14th, 15th, 16th, 17th, and 18th Brigades. Units of corps brigades will, in addition, take part in the autumn manœuvres.

V.—*Various Manœuvres.*

Independently of the manœuvres mentioned above, special manœuvres, which will be the subject of special instructions, will be carried out in the Alps and in the Vosges, as well as in Algeria, Tunis, and in Corsica. No fortress manœuvres will be carried out in 1905.

VI.—*Colonial Troops.*

Colonial troops, as far as the credits allotted to them will permit, will take part in the various manœuvres of the home troops carried out in the army corps districts in which the former are quartered. The 5th Colonial Infantry Brigade, quartered in Paris, will manœuvre with the 3rd Division of the IInd Army Corps. All expenditure resulting from the participation of Colonial troops in the autumn manœuvres, especially those with regard to railway transport and the hiring of supplementary horses, will be charged to the credits provided by the 2nd Section of the Budget.

VII.—*General Dispositions.*

Under reserve of special instructions which may be given by the War Minister, the manœuvres will be organised and regulated in conformity with the General Instructions of the 18th February, 1895. The duration of these different manœuvres, as well as the grants of blank ammunition to be allowed for them will be regulated by special instructions.

VIII.—*Special Dispositions.*

Infantry regiments will march to the manœuvres with their four battalions, with the exception of those of the XIVth and XVth Army Corps, which will be composed of 3 battalions each, and of those regiments which have no 4th battalion formed. At the same time, the 4th battalions of regiments belonging to the VIth, VIIth, Xth, XIth, and XXth Army Corps, which are quartered in fortified positions and in frontier or coast forts, the 159th Regiment and the battalions of the Lyons District Brigade, quartered in the Alps, will not take part in the autumn manœuvres. The 145th Regiment will manœuvre with one of the brigades of the Ist Army Corps. The group of Zouave battalions, the 4th Battalion 138th Regiment, and the 26th Chasseur Battalion, stationed in Paris, will manœuvre with the 3rd Infantry Division. The other foot chasseur battalions will take part in the manœuvres of their respective army corps. The Lyons group of Zouave battalions, 3 Alpine battalions of the XIVth Army Corps, and an Alpine battalion of the XVth Army Corps will take part in the autumn manœuvres. These latter will be selected by the generals commanding the army corps, and will be composed of 4 companies.—*Revue du Cercle Militaire.*

Definite Adoption of the 2 Years' Period of Service.—On the 17th March last the Chamber of Deputies, by 519 to 32 votes, adopted the 2 years' period of service, as passed by the Senate on the 16th January last. In this, its second deliberations, the Senate maintained its first decisions on the following essential points :—

Art. 23 :—Young men admitted to the St. Cyr and Polytechnic Schools will go through one year's period of service in a Regular unit before their entry into these establishments. Pupils received at the great civilian schools may, according to choice, go through the first of their two years' period of service in a unit under ordinary conditions, either before their entry into or after they have left these schools; the second year's period of service will be carried out as sub-lieutenants of Reserve by those pupils who have qualified for that rank. The others will go through that period of service as ordinary privates or as non-commissioned officers. In order to safeguard the principle of "equality," the basis of the new law, and in order to avoid the reproach of establishing a special rule in favour of the great schools, the Senate has introduced a new article (Art. 24), according to which all conscripts desirous of obtaining the rank of sub-lieutenant of Reserve may be appointed, as vacancies occur, cadet-officers of Reserve at the end of the first year, provided they satisfy the conditions laid down. They will complete their instruction in special courses during the first 6 months of the second year, and those who pass successfully a new examination will be appointed sub-lieutenants of Reserve. As such they will complete their last 6 months of service, and will have to attend 5 instruction periods in the Reserve instead of 2. To still further favour the recruiting of Reserve officers, the Senate allowed the arrangement voted by the Chamber (Art. 50), authorising the entry into service, before the legal date of such entry, of all youths aged at least 18 years in possession of a certificate of fitness for military service. They will be discharged after 2 years if they obtain a certificate of efficiency as a section commander, and if they engage to do 4 weeks' service in the Reserve and 2 weeks in the Territorial Army every three years.

Art. 39 :—Soldiers who have undergone imprisonment or who have been awarded cells for a prolonged period of 8 days are kept in their corps after the expiration of their period of service for a term of days equal to those passed in prison or in cells, deduction being made of punishment not exceeding 8 days.

Art. 41 :—Reservists are subject to 2 periods of 4 weeks of being called to the colours, and men of the Territorial Army to 1 period of 2 weeks. The Chamber have, however, limited the two periods for the Reservists to 15 days, and have abolished the calling out of men of the Territorial Army. Instructors as well as soldiers who have completed at least 3 years' service are let off one of the two periods in the Reserve.

Art. 54 :—Re-engagements may be contracted for 1 year, 1½, 2, 2½, and 3 years (4 and 5 years for non-commissioned officers), instead of 1, 2, and 3 years.

Art. 59 :—The number of inferior non-commissioned officers enlisted, re-engaged, and commissioned has been fixed at three-quarters, and that of corporals at half the total effective of these ranks. The Chamber has reduced these proportions to two-thirds and one-third respectively, deduction being made of those commissioned.

Art. 60 and 61 :—All soldiers bound to the Service for a longer period than 2 years receive, from the commencement of the 3rd year, a high rate of pay, varying for each rank, and those who serve 4 or 5 years are, in addition, entitled to a bounty proportionate to the time spent with the colours in excess of the three first years. The Chamber, however, do not give these bounties to re-engaged soldiers, excepting to those belonging to mounted or frontier corps.

Art. 65 :—Every soldier who leaves the Service after 15 years with the colours is entitled to a proportionate pension, and after 25 years' service

to a retiring pension. The Chamber, however, only allots proportionate pensions to non-commissioned officers. The Senate abolished the Board for Preparatory Physical Examination, and reintroduced the 2 years' period of service for the Algerian contingent, which had been reduced to one year. Ecclesiastical pupils and medical students, who were classified as in the medical service at the time of passing to the Reserve, are made liable to the general law. The Chamber of Deputies adopted without alteration the Senate's last scheme in order that the 2 years' period of service may be applied in 1906; but it has also charged the Army Commission to report, with brief delay, on a proposition of the special law tending to reduce the periods of calling Reservists and men of the Territorial Army to the colours.—*Bulletin de la Presse et de la Bibliographie Militaires.*

GERMANY.—*Grand Manœuvres in 1905.*—A Cabinet order of the 7th February last contains the following information with regard to the coming Grand Manœuvres in Prussia :—

The VIIIth and XVIIIth Army Corps will manœuvre against one another before the Emperor. They will, respectively, be reinforced for that period : the VIIIth Army Corps by the 68th Infantry Brigade (XVIth Army Corps), by the 11th Uhlan Regiment (XVth Army Corps), and by the 34th Field Artillery Brigade; the XVIIIth Army Corps by the 55th and 56th Infantry Brigades (XIVth Army Corps), by the 15th Dragoons (XVth Army Corps), and by the 28th Field Artillery Brigade (XIVth Army Corps). Each army corps will, in addition, be also provided with a balloon section. Finally the supply columns and the transport cadre *personnel* will be furnished by the 3rd, 4th, 7th, 10th, 11th, 14th, 15th, and 16th Transport Battalions. These manœuvres will be held in the country between Frankfort-on-the-Main and Manheim.

The special manœuvres for infantry brigades of 4 battalions will be authorised. Attack exercises of fortified positions with the participation of heavy artillery will form the subject of special instructions. Two sets of pioneer manœuvres will take place, the one at the junction of the Rhine and the Main, the other on the lower Rhine, near Coblentz. All dismounted troops must, as usual, have returned to their garrisons by the 30th September at the latest.

Cavalry Manœuvres.

Two cavalry divisions (A and B) will be formed for the Imperial manœuvres, and two more (C and D) to carry out special cavalry manœuvres in the eastern portion of the Empire. Each of these divisions will consist of 3 brigades of 2 regiments each, and will receive, in addition to a horse artillery brigade division, 2 machine gun detachments and a detachment of pioneers. The C and D Divisions will have, in addition, a detachment of signallers.

The Cavalry Division A for the VIIIth Army Corps will be formed by means of : the 14th Cavalry Brigade (VIIth Army Corps), the 11th Hussars and 5th Uhlans : the 15th Cavalry Brigade (VIIIth Army Corps), the 8th Cuirassiers and the 7th Hussars ; the 34th Cavalry Brigade (XVIth Army Corps), the 9th Dragoons and 14th Uhlans. It will also have the horse artillery brigade division of the 8th Field Artillery Regiment (VIIIth Army Corps), and the 10th and 11th Machine Gun Detachments (XIVth and XVIth Army Corps) from Schlestadt and Metz. Its pioneer detachment will be furnished by the 8th Battalion (VIIIth Army Corps).

The Cavalry Division B for the XVIIIth Army Corps will be formed by means of: the 4th Bavarian Cavalry Brigade (IInd Army Corps), 1st and 2nd Uhlans; the 25th Hessian Cavalry Brigade (XVIIIth Army Corps), 23rd and 24th Dragoons; the 28th Baden Cavalry Brigade (XIVth Army Corps), 20th and 21st Dragoons. Its horse artillery brigade division will be furnished by the 11th Field Artillery Regiment (XIth Army Corps). It will also receive the 2nd and 3rd Machine Gun Detachments (XVth Army Corps) and a pioneer detachment from the 21st Battalion (XVIIIth Army Corps).

The Cavalry Division C, formed from the Ist Army Corps, will consist of: the 1st Cavalry Brigade, 3rd Cuirassiers and 1st Dragoons; the 2nd Cavalry Brigade, 8th and 12th Uhlans; the 37th Cavalry Brigade, 10th and 11th Dragoons; the horse artillery brigade division of the 1st Field Artillery Regiment, a pioneer detachment, and a section of field signallers.

The Cavalry Division D will be composed of: the 4th Cavalry Brigade (IInd Army Corps), 3rd and 12th Dragoons; the 10th Cavalry Brigade (Vth Army Corps), 1st Uhlans and the regiment of mounted Jaegers; the 35th Cavalry Brigade (XVIIth Army Corps), 5th Cuirassiers and 5th Uhlans; the horse artillery brigade division from the 35th Field Artillery Regiment (XVIIth Army Corps); the 4th and 8th Machine Gun Detachments (XVIIth and VIth Army Corps); a pioneer detachment of the 17th Battalion (XVIIth Army Corps), and a section of field signallers.

These divisions will carry out special cavalry manœuvres: the A Division in a selected zone of the VIIIth Army Corps district, the B, C, and D Divisions in the Camps of Instruction at Senne, Arys, and Posen; the Divisions C and D will, in addition, carry out scouting and reconnoitring exercises against one another for 9 days, under the direction of the Inspector-General of Cavalry. Units of the IInd and XVIIth Army Corps may participate in these exercises with the concurrence of the last-mentioned general officer and of the officers commanding the army corps concerned. Units of the A and B Divisions will not take part in the brigade and division manœuvres of their own army corps.

Cavalry instruction rides will be carried out in the Ist, IInd, IIIrd, Vth, VIth, VIIIth, XIth, XIVth, and XVIth Army Corps; 850 to 2,500 marks is allowed for these rides.—*Précis from Strassburger Post* and *Revue Militaire des Armées Etrangères.*

ITALY.—*Manœuvres for 1905.*—The War Minister has recently decided that the Italian Army will take part in the following manœuvres and exercises during the current year:—

A. *Grand Manœuvres* will be held from the 23rd August to the 1st September inclusive in the neighbourhood of Benevento, the Royal Headquarters being probably fixed at Caserta. The IXth Army Corps (exclusive of the Cagliari Division) and the Xth Army Corps will take part in them.

B. *Staff Rides.*

C. *Cavalry Instruction Rides.*

D. *Instruction Camps, Brigade or Divisional, and Field Manœuvres.*—All army corps and the Cagliari Division will attend camps of instruction, and will take part in field manœuvres from the 1st to the 15th August. The two army corps alone, which take part in the Grand Manœuvres, will not assist at these exercises.

E. *Army Corps Cadre Manœuvres* will be held under the supervision of the Army Corps Commanders. Field officers noted for promotion will take part in them.

F. *Cadre Siege Manœuvres* will be held in the IInd and IIIrd Army Corps in accordance with instructions to be issued later.

G. *Cavalry Camps.*—A divisional camp will be organised at Pordenone in the Vth Army Corps, under the supervision of the Inspector-General of Cavalry. Before going to the camp at Pordenone, the troops will carry out scouting exercises for some days between Monselice and Udine. The Cavalry regiments mentioned below will take part in these exercises :—The 8th Montebello Lancers, the 22nd Catana Light Horse, forming the 1st Brigade under the Count of Turin; the 4th Genoa Cavalry Regiment, the 24th Vicenza Light Horse, forming the 2nd Brigade under the command of General Pugi. These cavalry exercises will be held from the 1st to the 15th September.

Two brigade camps will be organised at Gallarate in the IIIrd Army Corps. During the 1st period, from the 16th to the 30th August, a brigade formed of the 2nd Royal Piedmont Regiment and the 19th Guides will manœuvre under the command of General Sartirana, commanding the 3rd Cavalry Brigade. During the 2nd period, from the 1st to the 15th September, a brigade composed of the 1st Nice Regiment and the 5th Novara Lancers will manœuvre under General Carradini.

H. *Cavalry Cadre Manœuvres.*—These manœuvres will be held in the IInd, VIIIth, and Xth Army Corps. Officers of the 2nd, 7th, and 9th Brigades will take part in them. Each of the army corps mentioned above will be allowed 1,200 lire for these manœuvres.

War Budget for 1905-06. — The War Minister has just published his draft of the war budget for the financial year from 1st July, 1905, to the 30th June, 1906. The total expenses amount to the following figures :—

	Lire.
Ordinary expenditure - - - - -	223,781,000
Life annuities - - - - - - -	35,219,000
Extraordinary expenditure - - -	16,000,000
Total - - - - - -	275,000,000

If to this sum is added funds transferred, amounting to 6,995,699 lire, and the subsidy allotted the "Humbert I. Pensioners' Home," about 50,000 lire, it will be seen that the totals amount altogether to 282,045,699 lire. On the other hand, in order to ascertain the portion actually required for the maintenance of the Army, the sum of 68,779,018 lire should be deducted from the 275,000,000 lire mentioned above. The former sum represents Treasury receipts, as well as amounts devoted to target practice, and to the carbineers. It should be noted, therefore, that the actual expenditure for the Army amounts to 206,220,982 lire, divided into 190,220,982 lire for ordinary and 16,000,000 lire for extraordinary expenditure.

As regards the infantry, the budget provides for 400 captains on the "specially unemployed list," and for 700 vacancies for lieutenants or sub-lieutenants. This specially unemployed list was created as an expedient for checking the slowness of promotion in the infantry. 400 supernumerary captains were appointed, and to compensate for this the same number were placed on the retired list. An economy of 84,000 lire,

in comparison with 1904-05, has been effected regarding re-engagements. This saving is the result of the application of the new law on non-commissioned officers. The tables below show the budgetary as compared with the legal cadre effectives for the two financial years, 1904-05 and 1905-06:—

	1904-05.	1905-06.
Officers.		
Legal Cadre Effectives	13,974	13,860
Budgetary Effectives	13,923	13,673
Rank and File.		
Legal Cadre Effectives	265,901	265,901
Budgetary Effectives	207,162	207,162
Officers' Charges.		
Legal Cadre Effectives	11,564	11,567
Budgetary Effectives	8,154	9,401
Horses and Mules.		
Legal Cadre Effectives	40,351	40,351
Budgetary Effectives	36,906	37,394

The sums devoted during the last five financial years to the manufacture of new field artillery *matériel* amounts to 45,900,000 lire. According to the limitations laid down in Article 8 of the Law of the 5th May, 1901, the financial year 1905-06 being the sixth and last over which the total sum of 60,000,000 lire, provided for the change of artillery *matériel*, was spread, the remaining sum of 14,100,000 lire is allotted for that purpose for 1905-06. As, on the other hand, the extraordinary expenditure should not exceed the total of 16,000,000 lire, it results that for the financial year 1905-06 the other items of the extraordinary budget are allotted very small sums, as the artillery alone absorbs nearly the whole of the credits. Finally, the budget provides for the calling out of 60,000 men for a 20 days' period of instruction.

In short, the war budget for 1905-06 does not greatly differ from budgets of preceding financial years. The only remark it appears necessary to make with regard to it is that as the change of artillery *matériel* absorbs the greater portion of the extraordinary expenditure, hardly anything remains to devote to the organisation for defence of Italian territory.—*La France Militaire.*

SWITZERLAND. — *Grand Manœuvres in 1905.* — These manœuvres, which will take place this year between Soleure and Basle, will be carried out by the IInd Army Corps and 1 mixed division specially constituted with a view to the manœuvres. This division will consist of 2 infantry brigades, 2 Chasseur battalions, 1 engineer battalion, and 1 artillery regiment made up by 2 brigade divisions of 3 batteries of 4 guns each. A cavalry brigade, a horse machine gun company, a company of guides, and probably 2 mountain batteries and 1 battery of position, will also take part in the manœuvres. Fortress manœuvres will take place near St. Maurice.

Strength of the Federal Army. — According to the *Allgemeine Schweizerische Militär-Zeitung*, the strength of the Federal Army on the 1st

January, 1905, including the Elite and the Landwehr, amounted to 235,634 men. They were distributed as follows :—

Staff of the Army...	112	Élite and Landwehr.
Ist Army Corps	44,765	
IInd „	45,008	
IIIrd „	42,774	
IVth „	42,536	
Garrison troops	20,642	
Troops available for Service ...	39,634	
Total	235,634 men.	

The Élite consists of 145,400 men, who are distributed as follows :—

Ist Army Corps = 35,240 men...	Staff	505
	1st Division	15,855
	2nd Division	15,454
	Corps troops	3,426
IInd Army Corps = 35,417 men	Staff	475
	3rd Division	15,915
	5th Division	15,470
	Corps troops	3,557
IIIrd Army Corps = 34,100 men	Staff	486
	6th Division	14,945
	7th Division	15,257
	Corps troops	3,412
IVth Army Corps = 31,096 men	Staff	476
	4th Division	14,157
	8th Division	13,079
	Corps troops	3,384
Garrison troops = 6,367 ...	Staff	72
	St. Gothard	3,923
	St. Maurice	2,372
Troops available for service = 3,068 men.	Staff	45
	Units	3.023

In all 145,288 men, to which must be added 112 for the Army Headquarter Staff to make up the numbers mentioned above. These men are distributed as follows amongst the various branches of the Service :—

	Men.
Infantry - - - - - -	111,643
Cavalry - - - - - -	5,175
Artillery - - - - - -	17,523
Engineers - - - - - -	5,562
Medical troops - - - - -	1,923
Administrative troops - - - -	1,403

In all 143,229 men, to which must be added the 112 men of the Army Headquarter Staff and 2,059 of the staffs of the 4 army corps.

The Landwehr, which consists of 12 classes (14 for the cavalry), gives an effective of 44,701 men for the 1st Levy, and for the 2nd an effective of 26,456 men, and for troops, not distributed between the two levies, an effective of 19,077 men, which, the 145,400 men of the Elite being added, gives a total strength of 235,634 men for the Federal Army, including the Elite and the Landwehr, but not including the Landsturm.

UNITED STATES. — *Joint Army and Navy Exercises.* — Plans for the joint Army and Navy exercises, which are to be held in the Artillery Districts of Baltimore, the Potomac, and the Chesapeake from June 11th to 17th next, are now practically complete. Major-General James F. Wade, U.S.A., commanding the Atlantic Division, has charge of the preparation for and the conduct of the exercises on the part of the Army. The details of the equipment are in the hands of Brigadier-General F. D. Grant, commanding the Department of the East. The details of arranging the Army forces in their tactical positions, in the use of them in meeting the various forms of attack, are entrusted to the commanding officers of the three Artillery districts, viz. :—Colonel B. K. Roberts, commanding the Artillery District of the Potomac; Colonel Frank Thorpe, Artillery District of Baltimore; and Lieut.-Colonel R. D. Potts, Artillery District of the Chesapeake.

Rear-Admiral F. W. Dickins, U.S.N., will command the naval forces, and he has entire charge of all the details of preparation for his command. The programme of operations from day to day, will be arranged by conferences between the commanding officers of the two forces.

Major E. M. Weaver, Artillery Corps, U.S.A., in connection with the coming exercises has prepared the following statements which will be found of interest :—

"The Coast Artillery troops manning the defences of Baltimore, of the Potomac, at Forts Washington and Hunt, and of Hampton Roads, at Fort Monroe, are to engage in joint exercises with the coast squadron of the Navy, during the period of 11th to 17th June next. Heretofore these joint exercises between the two services have been designated as 'manœuvres,' but the word 'manœuvre' has come to have such a technical meaning in connection with the field troops, that it has been thought best not to make use of it in connection with the inter-service drills between the Coast Artillery and Navy. The word 'exercise' has therefore been substituted as more correctly defining the conditions which obtain between the two Services.

"The general plans for these exercises were prepared by the presidents of the Army War College and the Naval War College under the direction of the Joint Board. This Board consists of the Chief of the General Staff, and the Assistant Chief of the General Staff, the president of the Army War College, the Chief of Artillery, the Admiral of the Navy, the Chief of the Bureau of Navigation, and two other naval officers.

"The object of the joint exercises is to test the *personnel* and *matériel* of the sea coast defences. The operations are to be confined to the fixed defence of Hampton Roads, the Potomac River, and Baltimore, and on the part of the Navy may include :—*a.* counter-mining or removal of mines; *b.* reconnaissance in force either by day or night; *c.* a running by at night; *d.* gun attacks upon search-lights, range-finders, signal stations, etc.; *e.* such direct attacks upon the principal defences as may be considered possible. The exercises are to begin at midnight on 11th June, and to terminate at noon on 17th June, 1905.

"No landing operations are to be undertaken, and because of lack of available funds, no militia force can be invited to participate. The troops taking part in defence will consist, therefore, of Regular troops only.

"The mobilisation of the Coast Artillery for these exercises is based upon one relief for each gun emplaced, with such additional men as may be needed to furnish three reliefs to the range-finders, and a complete complement required for the submarine defence.

"The channels of approach to the several fortresses are to be considered mined only for counter-mining or removal operations on the part of the Navy. For other purposes, such as reconnaissances in force, direct attack, or running by, they should be considered as not mined by the Navy, but the Army may make use of these efforts of attack to test the efficiency of their mine system. No channels of approach will be considered as obstructed by hulks or other sunken objects.

"The attacking squadron will consist of the 'Texas,' the flag-ship of the Coast Squadron, the monitors 'Arkansas,' 'Florida,' and 'Nevada,' the 'Hartford' and several destroyers. There will be no floating defensive force associated with the Coast Artillery, and no landing forces other than the artillerymen manning the guns. The Navy will not undertake any landing operations, and on the part of the Army there will be no Infantry or Light Artillery to guard against landing expeditions and to defend search-lights, signal stations, or range-finding stations.

"The exercises will be conducted under a system of rules that have been drawn up under the direction of the War and Navy Departments for governing such inter-service exercises. These rules are formulated with a view to meeting the circumstances and incidents likely to arise in an attack by a hostile fleet on the harbours or coast of the United States, and are based on the assumption that the primary object of the exercises on either side is to investigate certain problems of attack and defence, and to test the *personnel* and efficiency of the *matériel*.

"They prescribe in detail the information that is to be sought by all officers connected with both sides, and the use that is to be made of this information. They lay down certain general rules that must be observed by each Service in the various forms of attack, and corresponding defence. They create the offices of umpires and observers, and prescribe the duties thereof; prescribe what reports are to be made by the various officers connected with the exercises, and to whom these reports are to be rendered; prescribe a board of review to consider all such reports, and to draw therefrom such lessons as may be of benefit to both branches of the Service. These reports are to be submitted in duplicate, one to each of the War Colleges of the two Services, for examination and study with a view to publication for the benefit of the Services."

Detachments of the Signal Corps will be on duty at the several stations, and will take advantage of all the methods of signalling, for obtaining and transmitting information. Wireless telegraphy will play an important part in the signalling.—*U.S. Army and Navy Journal.*

Details of two additional Lectures, not previously announced on Lecture Card, will be found in the Secretary's Notes.

ERRATUM.

Correspondence—"Army (Militia) Reform."

Page 597, Line 45 (last line), for *"Gratuity expenses,"* read *"Gratuity or pension."*

CORRESPONDENCE.

ARMY (MILITIA) REFORM.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—I send you a short memo. I drew up some time ago (of which I sent to the War Office a copy), as perhaps you may be able to find space for it in the JOURNAL:—

1. After Jena, Prussia was forbidden by Napoleon to maintain a standing Army. The present military system of Germany owes its origin to that edict. The British taxpayer will not allow the nation to maintain a large and well-paid standing Army sufficient for our needs. Therefore we must seek some other method of national defence. The German system presents a parallel which we may, with necessary modifications, follow.

2. The principle should be recognised that it is a national duty for every man to provide personally for, at any rate, Home Defence. For this purpose the old constitutional system of the ballot should be maintained. If the democracy is to be asked to sanction the ballot, it must be on a democratic basis, *i.e.*, there must be no exemptions from personal service except such as are applicable to all grades of society.

3. The Militia should be amalgamated with that portion of the Regular Army that is serving at home, and called the Home Army.

4. One system of recruiting and enlistment for the Home Army. Enlistment for general service and liability for service outside the United Kingdom in time of peace to be obtained by offering special inducements, and not to carry any personal obligation.

5. The Army abroad to be relieved by drafts and not by units. All officers and non-commissioned officers, after a specified period of foreign service, to be entitled to an equal period of service at home.

6. The quota for each regimental district to be raised, if possible, voluntarily, but if necessary by the ballot; length of recruits' training in all cases to be for 12 months; the "one-year volunteer" principle to be adopted so far that those who desire it may live out of barracks and enjoy other privileges at their own expense. The system of billeting might be adopted in some cases, especially when barrack accommodation is limited.

7. The recruit on completing his year's training to have three courses open to him:—

a. To join a Reserve unit for his first period of service (say 5 years), with an annual training of 14 days, and 7 days, or 14 half-days, musketry training.

b. To join a Regular unit at home for 3 years' colour service and 9 years 1st Class Army Reserve.

c. To join Regular unit abroad for 8 years' colour service and 4 years 1st Class Army Reserve (or 12 years' colour service, with gratuity expenses).

Special inducements to be offered to *b* and *c*, such as increased pay, bounties, civil employment on discharge, etc.

All men in Class *a* to be liable for service within the Empire (and, with their own consent, beyond the Empire) in time of war.

d. After completing term of service in *a*, *b*, or *c*, to have the option, on receiving a bounty, of joining a unit of the second line of the Reserve (Landwehr), for a further period of service limited to the United Kingdom.

8. The normal establishment of a regimental district is two Regular battalions of infantry and two Militia battalions. Under the proposed scheme the unit abroad would be recruited from Class *c* of Para. 7; the Regular unit at home from Class *b*; the 1st Reserve unit from Class *a*; and the 2nd Reserve unit from Class *d*. The 1st and 2nd Reserve units would replace the two Militia battalions.

9. The 1st Reserve unit would take the place of the regimental depôt, and be commanded by a lieut.-colonel, with an adequate establishment of officers and non-commissioned officers of the Regular Army, and completed for training or mobilisation by a number of Reserve officers who had attained a sufficient degree of efficiency to qualify for this unit. The 2nd Reserve unit would correspond to a large extent with a Militia battalion as at present, but the ranks would be filled with older men who had all gone through not less than 12 months' recruits' training in one of the Regular or 1st Reserve battalions. For war, when the 1st Reserve was mobilised the 2nd Reserve would replace it at the depôts, and themselves become organised units available for Home Defence.

10. The artillery to be organised on the same principle (except H.A.). Two brigade divisions of F.A., one abroad and one (usually) at home, to be affiliated with two localised Artillery Reserve units. For mobilisation or training, an interchange of horses, drivers, and artificers to take place between the Regular and the 1st Reserve unit. Some modification of terms of service might be required.

11. It is claimed for this scheme that it would be less costly than our present system, and would provide in time of emergency a much larger fighting force. We should require stronger cadres of officers and non-commissioned officers in permanent employment than at present, and those not permanently employed would require higher training. This would involve increased cost. On the other hand, the actual numbers of men serving with the colours might be considerably reduced, and the period of annual training of Reserve units would be much shorter and therefore less costly than that at present in force for the Militia. Large employers of labour state that they can spare men for 14 days' training without filling their places. A man who has undergone 12 months' drill on enlistment can be kept efficient by a short annual training. There are of course numerous matters of detail in connection with the scheme which would have to be considered. They are not set out here, as the object is merely to give a general outline of the proposals. If they are considered to be of any value, details can be discussed later.

JAMES D. LEGARD, Colonel,
Commanding The Yorkshire R.G.A. (Militia).

Welham, Malton,
10th March, 1904.

NAVAL AND MILITARY CALENDAR.

APRIL, 1905.

1st (Sat.) H.M.S. "Commonwealth" commissioned at Portsmouth for Atlantic Fleet.

" " H.M.S. "Amethyst" commissioned at Portsmouth for service in Atlantic Fleet.

4th (T.) H.M.S. "Vengeance" recommissioned at Colombo for service on the China Station.

" " A violent earthquake visited Northern India and caused immense damage and great loss of life at Lahore, Mussooree and Dharmsala. At the latter place many Gurkha troops were killed.

" " The Japanese defeated the Russians north of Kai-yuan, in Manchuria, killing 200.

7th (F.) H.M.S. "Ringdove" commissioned at Devonport for Newfoundland Fisheries Protection Duties.

8th (Sat.) Launch of first-class battle-ship "Minnesota" at Newport News, U.S., for U.S. Navy.

" " Admiral Rodjestvensky's fleet passed Singapore.

11th (T.) H.M.S. "Amethyst" left Portsmouth for Lisbon to join Atlantic Fleet.

" " H.M.S. "Tauranga" from Australian Station paid off at Portsmouth.

13th (Th.) H.M.S. "London" arrived at Portsmouth from Mediterranean.

15th (Sat.) H.M.S. "Ariadne," "Gibraltar," "Hawke," and "St. George" arrived at Portland from West Indies.

" " 12th Co. R.E. } Arrived at Southampton from South Africa in
37th Co. R.E. } the "Dunera."

" " The Japanese occupied Pa-chia-tzu and Ting-hua.

19th (W.) Launch of first-class battle-ship "Liberté" from the Chantiers et Ateliers de la Loire, à Penhoët, St. Nazaire, for French Navy.

22nd (Sat.) 38th Brigade R.F.A. arrived at Southampton from India in the "Sicilia."

24th (M.) H.M.S. "Scylla" left Sheerness for Newfoundland Fisheries Protection Duties.

25th (T.) H.M.S. "London" paid off at Portsmouth from Mediterranean.

26th (W.) H.M.S. "London" recommissioned at Portsmouth for Mediterranean.

28th (F.) H.M.S. "Ringdove" left Queenstown for Newfoundland Fisheries Protection Duties.

Addenda—March Calendar.

18th (Sat.) Launch of first-class armoured cruiser "Washington" from the Cramp Shipbuilding Yard, Washington, for U.S. Navy.

22nd (W.) Launch of third-class cruiser "Leipzig" from the Weser Yard, Bremen, for German Navy.

FOREIGN PERIODICALS.

NAVAL.

ARGENTINE REPUBLIC. — *Boletin del Centro Naval.* Buenos Aires: March, 1905.—Has not yet been received.

AUSTRIA-HUNGARY.—*Mittheilungen aus dem Gebiete des Seewesens.* No. 5. Pola: May, 1905.—"Observations on the Russo-Japanese War" (*continued*). "The Conning Tower in War-ships." "Armour Protection for Q.F. Guns in Battle-ships and Armoured Cruisers." "On Photography in Natural Colours." "The Reorganisation of the English Fleet." "This Year's English Naval Manœuvres." "Foreign Naval Notes."

BRAZIL.—*Revista Maritima Brazileira.* Rio de Janeiro: January, 1905.—Has not yet been received.

FRANCE.—*Revue Maritime.* Paris: January-March, 1905.—Has not been received.

La Marine Française. Paris: April, 1905.—"Towards England: The true Triple Alliance and the Division of Duties." "Ought Russia to continue the War?" "The '*Inscription Maritime*' and the Two Years' Service." "The War of Squadrons and the Empire of the Sea: *A propos* of Commandant Klado's Book." "Togo's Tactics." "The Naval Budget of 1905 and the Programme of New Constructions."

Questions Navales: Revue Générale de la Marine. Paris: 10th April, 1905.—"Our Mercantile Marine." "A Glance at Naval Tactics: The Best Fighting Ships" (*continued*). "The Battle of the Boilers: The Report of the Boiler Committee in England." "The Control of the Navy." "Home and Foreign Naval Notes." 25th April.—"Our Mercantile Marine" (*continued*). "A Glance at Naval Tactics" (*concluded*). "Home and Foreign Naval Notes."

Le Yacht. Paris: 1st April, 1905.—"The Reserve Squadron of the Baltic Fleet." "Yachting Notes." "The Commerce between France and Algeria and the Strikes at Marseilles." "The Future of the Submarine." "The Administration of our Seamen." 8th April.—"The Naval Budget in the Senate." "Yachting Notes." "The New Japanese Battle-ship 'Kashima.'" "The Commerce between France and Algeria and the Strikes at Marseilles" (*concluded*). 15th April.—"The Russian Fleet at Port Arthur: The Effects of the Torpedo during the Siege." "Yachting Notes." 22nd April.—"The Navy in the Senate." "Yachting Notes." "Naval Medical Arrangements in France and Abroad." "Launch of the First-class Battle-ship 'Liberté.'" "*A propos* of Neutrality: Russians and French." 29th April.—"The Next Naval Battle in the Far East." "Yachting Notes." "The English Armoured Cruiser 'Carnarvon.'" "The U.S. Hydrographical ship 'Explorer.'"

Le Moniteur de la Flotte. Paris: 1st April, 1905.—"Our Collection of Submarines." "Speed and Power." "The Navy in Parliament." "The Russo-Japanese War." 8th April.—"The New Law for the

Mercantile Marine." "A Japanese Account of the Naval Battle on 10th August off Port Arthur: A Justification of Admiral Oukhtomski." "The Naval Budget in the Senate." "The Russo-Japanese War." 15th April.—"The Russian Squadron." "The Naval Budget in the Senate." "The Russo-Japanese War." 22nd April.—"The Encouragement given to the Mercantile Marine in Foreign Countries." "The Navy in Parliament." "The Russo-Japanese War." "Promotion among the men of the Fleet." 29th April.—"On Neutrality." "The Navy in Parliament." "The Superior Council of the Navy and the Technical Committee." "The Russo-Japanese War."

GERMANY.—*Marine Rundschau.* Berlin: May, 1905.—"The three Principal Competitors for the World's Markets." "Russia in Central Asia and England's Frontier Policy." "Saghalien Island." "The Condition of the Sea Defences of Indo-China." "The French Naval Budget in the Senate." "The Russo-Japanese War." "The U.S. Naval Estimates for 1905-06 in Congress." "The Spring Meeting of the Institution of Naval Architects." "Foreign Naval Notes."

ITALY. — *Rivista Marittima.* Rome: April, 1905. — "The Recent Progress in Wireless Telegraphy." "The Statutes in Favour of the Mercantile Marine." "Diagrams of the Resistance of Ships when Moving through the Water." "On the Friction caused by Lubricating Oils." "The Education of Japanese Naval Officers." "The Mareographical Service in Italy." Letters to the Director:—"How to Rejuvenate the Academy." "On the use of the Kelso Apparatus." "Foreign Naval Notes."

PORTUGAL. — *Revista Portugueza, Colonial e Maritima.* Lisbon: March, 1905.—"The Report of the English Boiler Committee." "On the Necessity of a Navy." "The Colonial Movement." "Naval Notes."

Annaes do Club Militar Naval. Lisbon: December, 1904.—"On Wireless Telegraphy." "The Uniforms of Officers and Privates." "The Real Position of Naval Doctors." "Naval Architecture." "Foreign Naval Notes."

SPAIN.—*Revista General de Marina.* Madrid: April, 1905.—"The Steamer 'Caronia.'" "The Russo-Japanese War and Coast Defence." "New Engines of War and their Inventors." "The Brussels International Conference." "The Defence against Submarines." "Conning Towers." "Experiments with Wireless Telegraphy." "Coast Defence." "The Monroe Doctrine." "Foreign Naval Notes."

UNITED STATES.—*Proceedings of the U.S. Naval Institute.* No. 1. Annapolis: March, 1905.—"American Naval Policy." "The Department of the Navy." "A Study of Attacks upon Fortified Harbours." "A Proposed New Health Record." "Aiming by Telescope Sight compared with Aiming by Open Sight: A Psychological Study." "Classes of Operations of the Continental Navy of the American Revolution." "A Plea for the Adoption of the Revised Infantry Drill Regulations of the Army." "The Founder of the New Navy."

MILITARY.

ARGENTINE REPUBLIC.—*Revista del Boletín Militar del Ministerio de Guerra.* Buenos Aires: 1st March, 1905.—"Points on Some Questions of Military Law." "New Regulations of the Superior School of War" (*continued*). "The Geneva Convention" (*continued*). "Points on the Military Telegraphic Course." "Horse and Mule Remounts." "The Transformation of the Cavalry" (*continued*). "Provisional Regulations for the Manœuvres of Infantry" (*continued*). 15th March.—"The Transformation of the Cavalry" (*continued*). "The Geneva Convention" (*continued*). "The Supply of Ammunition to Troops in the Field." "Some Points on the Military Telegraphic Course" (*continued*). "Provisional Regulation for the Manœuvres of Infantry." "The Fight between Infantry and Machine Guns."

AUSTRIA-HUNGARY. — *Danzer's Armee-Zeitung* Vienna: 6th April, 1905.—"A New Regulation." "Continuation of the Russo-Japanese War." "Experiences of an Infantry Regimental Commander" (*continued*). 13th April.—"Field-Marshal John, Prince of Liechtenstein." "The Russo-Japanese War" (*continued*). "Experiences of an Infantry Regimental Commander" (*continued*). 20th April.—"A Work from Another Standpoint." "Experiences of an Infantry Regimental Commander" (*continued*). "Vladivostok." 27th April.—"Administrative Reform and the Two Years' Period of Service." "The Russo-Japanese War" (*continued*). "Experiences of an Infantry Regimental Commander" (*continued*).

Organ der Militär-wissenschaftlichen Vereine. Vienna. Vol. LXX. Part 3.—"The Russo-Japanese War." "Chief Naval Events of the Russo-Japanese War." "War Lessons."

Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens. Vienna: April, 1905.—"Automobiles at the Austro-Hungarian Manœuvres of 1904." "Employment of Troops at the Attack and Defence of Fortresses."

BELGIUM.—*Bulletin de la Presse et de la Bibliographie Militaires.* Brussels: 15th April, 1905.—"Contribution to the Study of the Psycho-Physiology of Shooting." "The Russo-Japanese War" (*continued*). 30th April.—"Study of Some Elementary Situations in Action." "The Russo-Japanese War" (*continued*).

FRANCE.—*Revue du Cercle Militaire.* Paris: 1st April, 1905. —"The Russo-Japanese War" (*continued*). "Military Charges of a Province in the 17th and 18th Centuries" (*continued*). "Episodes of the Mexican Expedition" (*continued*). 8th April.—"Reciprocity in the Army." "The Russo-Japanese War" (*continued*). "Military Charges of a Province in the 17th and 18th Centuries" (*continued*). "Episodes of the Mexican Expedition" (*continued*). 15th April.—"Reciprocity in the Army" (*continued*). "The Russo-Japanese War" (*continued*). "Episodes of the Mexican Expedition" (*concluded*). "Military Charges of a Province in the 17th and 18th Centuries" (*continued*). 22nd April. —"The Russo-Japanese War" (*continued*). "The Two Years' Law." "Reciprocity in the Army" (*continued*). "Military Charges of a Province in the 17th and 18th Centuries" (*continued*). 29th April.—"Reciprocity

in the Army" (*continued*). "The Russo-Japanese War" (*continued*). "Military Charges of a Province in the 17th and 18th Centuries" (*concluded*). "The Two Years' Law" (*continued*).

Le Spectateur Militaire. Paris: 1st April, 1905.—"The Russo-Japanese War" (*continued*). "The Russo-Turkish Campaigns of 1877-78" (*continued*). "Days on the Lisaine, the 15th, 16th, and 17th January, 1871" (*continued*). "Military History and Organisation of Railways" (*continued*). 15th April. — "The Russo-Japanese War" (*continued*). "The Russo-Turkish Campaign of 1877-78" (*continued*). "The *Moral* of our Soldiers" (*continued*). "Military History and Organisation of Railways" (*continued*). "Days on the Lisaine, the 15th, 16th, and 17th January, 1871" (*continued*).

Revue du Génie Militaire. Paris: March, 1905.—"Notes on the Establishment of the Mailly Camp of Instruction" (*concluded*). "A new Profile of Wall revetment for Fortifications." "New Automobile Conveyance on Aerial Rails by Electric Traction."

April, 1905.—Has not been received.

Revue d'Artillerie. Paris: April, 1905.—"Chronophotographic and Mathematical Study of the Horse's Paces" (*continued*). "Progress of Modern Field Artillery." "The Japanese Artillery" (*continued*).

Revue de Cavalerie. Paris: April, 1905.—"The Short Period of Service and the Preparation of Cavalry for War." "The Surprise of the Forton Division, 16th August, 1870." "On the Use of our Weapons." "The Principles of the New English Cavalry Regulations."

Revue Militaire des Armées Etrangères. Paris: April, 1905.—"Reorganisation of the Indian Army." "Military Cycling in Italy."

Revue d'Histoire. Paris: April, 1905.—"The Campaigns of Marshal Saxe" (*continued*). "The Campaign of 1800 in Germany" (*continued*). "The War of 1870-71" (*continued*).

Revue du Service de l'Intendance Militaire. Paris: April, 1905.—Has not been received.

Journal des Sciences Militaires. Paris: April, 1905.—Has not been received.

GERMANY.—*Militär-Wochenblatt.* Berlin: 1st April, 1905.—"The Results of the Fighting round Port Arthur." "The New French Defence Regulations." "The Importance of Field Mortars in Future Wars." 4th April.—"The Power and Importance of a Well-defined Initiative." "The French *Rafale* Theory." "From the Norwegian Army." 6th April.—"The Fighting in Natal after the Action of Colenso: Review of Events in the Orange Free State and Transvaal up to the Autumn of 1900." "Sanitary Service in the Far Eastern War: The Japanese." "The Development of Rapidity of Fire with Field Guns." "Double Companies in the English Army." 8th April.—"Employment of Cavalry in the Russo-Japanese War, 1904." "Artillery before Port Arthur." "Development of Rapidity of Fire in Field Guns." 11th April.—"The Clothing Question with the Manchurian Army." "Employment of Cavalry in the Russo-Japanese War" (*continued*). "Japanese and German Field Fortification." 13th April.—"Heavy Artillery of a Field Army." "Employment of Cavalry in the Russo-Japanese War, 1904" (*continued*). 15th April. — "Battle Training of the Infantry." "Employment of Cavalry in the Russo-Japanese War, 1904" (*concluded*). "Kharbin." 18th April.—"On the Working of the French Siege and Fortress Guns."

"Battle Training of the Infantry" (*concluded*). 20th April.—"The Russo-Japanese War" (*continued*). "Intelligence from the Belgian Army." 22nd April. — "Musketry Training." "The Russo-Japanese War" (*continued*). "From the Swedish Forces." 27th April.—"Easier Aiming—Better Shooting." "Measures for the Protection of the Indian North-West Frontier." 29th April.—"Intelligence of the Austro-Hungarian Forces."

Internationale Revue über die gesamten Armeen und Flotten. Dresden: April, 1905.—"Military and Naval Intelligence from Austria-Hungary, Belgium, Bulgaria, Denmark, France, Germany, Great Britain, Italy, Russia, Sweden, Spain, Turkey, and the United States. *Supplement 61.*—"The Development of French Naval Artillery from 1893 to 1904." "Accidents with Guns, Machine Guns, and Small Arms or their Ammunition in 1903 and 1904." *French Supplement 73.*—"The Advantages Machine Guns give to the three Arms." "A Mexican Officer's Opinion on the German Army." "Supply in the Field." "Fate of Wounded Soldiers To-day and in 1870-71." "Premature Explosion of Gun Charges and the Means of Averting them." "Passage of Water by Field Artillery." "The New French Infantry Drill Regulations."

Jahrbücher für die Deutsche Armee und Marine. Berlin: April, 1905.—"The Fire-working of Modern Artillery." "Reflections on the French Infantry Drill Regulations." "Recollections and Opinions of an old Cavalry Officer." "The Normal Attack." "Hygienic Axioms for the Clothing and Equipment of Infantry." "The Siege Warfare Question." "Italian-German Military Connections in the last Forty Years." "Russia and the Russo-Japanese War" (*continued*).

Neue Militärische Blätter. Berlin: March, 1905. No. 11.—"The Importance of Fortifications." "Night Battles." "Strategic Importance of Mukden." "Field Fortifications on the Battle-field in the Modern Conduct of War." "Field Artillery Questions." No. 12.—"War and Battle Lessons from the Crisis at Mukden." "Port Arthur." "Opening of a Competition for the Improvement of French Barracks." "Military Events of the Two last Weeks." "Military Intelligence."

April, 1905. No. 13.—"Retrospect of the Events of the War in the Far East." "Military Long-Distance Rides." "Performances of Russian Soldiers in the Present War and the Circumstances Influencing them." "Port Arthur" (*continued*). "Military Intelligence." No. 14.—"The Krupp-Ehrhardt Debate in the German Reichstag." "Remarks on the Article: 'On the Artillery Question.'" "The Defence of French Colonies." "Machine Guns." "Military Intelligence."

ITALY.—*Rivista di Artiglieria e Genio.* Rome: February, 1905.—"The Russo-Japanese War, 1904" (*continued*). "Modifications in Italian Regulation Respecting Bridging Material, and to the Manœuvres Relating to them." "The Conduct of Fire against Captive Balloons." "Alcohol and its Greater Importance for Industrial Uses." "Dismounted Instruction for Field Artillery." "Foreign Military Notes."

March, 1905.—"*A propos* of a Solution of the Military Problem." "The Russo-Japanese War, 1904" (*continued*). "On the Training of Officers of Field Artillery." "The Pressure of the Wind on Buildings."

Rivista Militare Italiana. Rome: April, 1905. — "An Advance Screen!?" "The Artillery with the other Arms in the Grand Manœuvres, 1903." "A Study on the Moving of Wounded during Battle" (*concluded*). "*A propos* of the Military Problem" (*continued*). "Require-

ments and Needs of Field Artillery." "The Russo-Japanese War." "Foreign Military Notes."

PORTUGAL.—*Revista de Engenheria Militar.* Lisbon: March, 1905.—"The Engineers and the Combined Army Manœuvres in the Autumn, 1904." "Urban Building at Leiria." "Projected Railway from Lorenzo Marquez to the Swaziland Frontier." "Points in the Practical Tests for Captains of Engineers, and for Promotion to Major in 1904."

Revista de Infanteria. Lisbon: April, 1905.—"The Armament of Infantry." "Pay and Gratuities." "Rifle Ranges." "The Bullet and the Bayonet." "Mounted Infantry." "Foreign Military Notes."

RUSSIA.—*Voĭénnyĭ Sbórnik.* St. Petersburg: April, 1905.—Has not been received.

SPAIN.—*Memorial de Ingenieros del Ejército.* Madrid: February, 1905.—"Mechanical Traction in the Field" (*concluded*). "Experiments with Field Wireless Telegraphy Stations, System: Braun-Slavy-Arco" (*concluded*). "The Dolberg Material." "New System of a Weighing Steel-yard without weights."

Revista Técnica de Infantería y Caballería. Madrid: 1st April, 1905.—"The Paucity of the Militia." "Limitations of the Social Class Imposed on the Army." Lectures at the Military Club: "On the Vulnerability of Narrow Formations exposed to Rifle Fire." "Machine Guns in the Field." 15th April.—"Civilised War." "The Paucity of the Militia." "The Best Age for Military Service." Lectures at the Military Club: "Machine Guns in the Field." "Defects in the Cavalry." "Dormant Military Rights."

Revista Científico-Militar y Biblioteca Militar. Barcelona: April, 1905.—"A Discourse on Arms and Letters." "Physical Exercises and the Army." "The *Rôle* of Cavalry in Modern War, by Von Pelet-Narbonne." "The German Volunteer Automobile Corps of Automobilists." "The Boeage Automobile Battery."

SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: April, 1905.—"The Russo-Japanese War" (*continued*). "On Tactical Flanking Positions." "Foreign Alpine Troops." "The Army and Sport."

UNITED STATES.—*The United Service.* New York: April, 1905.—"Operations on the Yalu." "Account of the Battle of Shake River, Manchuria." "The Present Military Educational System of the United States." "Old Boston." "The 'Chesapeake' and 'Shannon,' June 1st, 1813." "The Use of Trees in Wireless Telegraphy in Field Operations." "Our Contemporaries." "Editorial Notes." "Service Salad." "Richard Wainwright, Captain, U.S. Navy."

Journal of the U.S. Cavalry Association. Fort Leavenworth, Kansas: April, 1905.—"Cavalry in Modern War." "Simpler Commands in the Cavalry Drill." "Surra." "The French Cavalry School at Saumur." "The Four Cavalry with General Lawton in Luzon." "From Texas to Dakota." "The First Act of the last Sioux Campaign." "The "Santiago Campaign of 1898." "Military Notes." "Reprints and Translations."

NOTICES OF BOOKS.

Strategy Illustrated by British Campaigns. By Captain C. E. K. Macquoid, D.S.O., XXth Deccan Horse, Inspecting Officer Hyderabad and Mysore Imperial Service Troops. With introduction by Field-Marshal Earl Roberts, V.C., K.P., Including twelve maps and seven plates. London, Paris, New York, and Melbourne: Cassell & Company, Limited. MCMIV. Price, 10s. 6d. (net).

The *imprimatur* of Lord Roberts is of itself a very strong recommendation to any book; and, in addition, there is the fact that Captain Macquoid's strategical studies are based upon British instead of upon the more fashionable operations of foreign Armies. That British campaigns have exercised some influence upon the world's history is manifested by the magnitude of the British Empire, which is for them a splendid, and, we may be permitted at least to hope, an enduring monument. It is true that British forces in the field have seldom been numerous, even inclusive of allies, and hence the rather common preference for the study of other wars, in which greater Armies have been engaged. But the true importance of a campaign should be measured by its results, rather than by the number of the combatants, and judged thus there have been victories won by mere handfuls of men—for example, Plassy and Assaye—which deserve to rank with a Jena or a Sedan. Wellesley was victorious at Assaye, because, having the genius to realise the situation, he had also the courage to adopt the bold offensive which it demanded, and his tactical skill did the rest. Bazaine at Vionville missed a great opportunity, because he was not a Wellington. In the one case, a very weak force, boldly handled by a master of the art of war, snatched a great victory, in face of overwhelming odds, and thereby prevented its own annihilation; in the other, a great Army permitted itself to be held in check by an inferior enemy. In both cases the result was governed by the quality of the general, rather than by that of the troops under his command, and the lesson for the student is consequently the same.

Enough has been said to justify the motives of Captain Macquoid; and the "all-British" character of the book, coupled with the general approval pronounced by Lord Roberts, should suffice to secure for it many readers and very attentive consideration. Strategy is so wide a subject that differences of opinion upon almost any point are inevitable; but taking his work as a whole, Captain Macquoid has certainly achieved a notable success.

The main features of the book are a statement of five "Leading Principles" of strategy, presented in the first chapter of Part I., followed by a detailed examination of those principles; and in Part II. the author deals exhaustively with the various "influences" by which strategical combinations are favourably or adversely affected. To follow the latter, within reasonable limits of space, would be impossible, and these remarks must therefore be confined to Part I.

The five "forms or principles" enunciated by Captain Macquoid for the classification of strategical manœuvres are as follows:—

I.—Strokes at an enemy's line of communications.
II.—Compelling an enemy to "form front to a flank."
III.—Movements defined as "Interior *versus* Exterior Lines."
IV.—Penetration between the separated parts of an enemy's strategic front.
V.—The direct advance on the objective.

Looking at the above list, a majority of readers will probably decide at once, that manœuvres on interior or exterior lines suggest an "influence" rather than a "principle," and that there is indeed no principle involved except the general expediency of operating upon interior lines if any choice upon the subject is open. But a good general will always follow the course which appears to offer the best chances of success, regardless of whether it is theoretically correct or otherwise. Moreover, at the outset of hostilities the obligation to operate upon exterior lines, with the attendant advantages or disadvantages, is usually thrust upon one of the combatants by the political and geographical conditions under which the war is commenced; and in such cases the question of profit or loss is one of circumstances, tempered by skill. To some extent Captain Macquoid appears to have overlooked this aspect of the subject, and to have laboured unnecessarily on the academic side of it to the exclusion of matter of greater practical value. As an example of an "unsuccessful" operation against an enemy's communications, Captain Macquoid selects Moore's campaign in the Peninsula; and this is curious, because he quotes the opinion of Alison that "it instantly paralysed the movements of the whole French Armies in the South of Spain." Moore, one has been accustomed to believe, gained his end; by distracting the French he procured *time* for the assembly of Spanish Armies, and eventually his force, after turning to bay with sufficient success at Corunna, re-embarked without greater loss than the occasion justified. Moore's operations were based upon sea power, and the British general thereby enjoyed a freedom of action which could not otherwise have been his. In the Corunna campaign the available means were wisely and successfully applied to the attainment of the object in view—an effective diversion in favour of the Spaniards.

The example of a "successful stroke" against communications is well chosen; indeed, a better could scarcely have been selected, since the choice has fallen upon Wellington's campaign of Vittoria. In reference to "Principle" II., the Salamanaca campaign is equally well chosen, the particularly instructive feature of it being that good strategy gave Marmont the desired advantage, which he nevertheless lost by bad tactics. The selections under Principle III. are also appropriate, and Captain Macquoid is right in suggesting that Principle V. is the most suitable to the British temperament—our South African experiences notwithstanding. That principle is obviously the right one to be followed in the case of an Army which, owing to superior numbers or *moral*, is deemed capable of employing it successfully; because, however costly at the moment, the actual expenditure of blood and treasure will usually be less than in a protracted series of indecisive operations—as in the case of South Africa.

Captain Macquoid's book deserves to be widely read, and to whatever extent officers may agree with or differ from the views expressed, none who devote careful study to its pages can fail in gaining from them many a useful hint.

PRINCIPAL ADDITIONS TO LIBRARY FOR APRIL, 1905

Problems in Manœuvre Tactics. After the German of Major Hoppenstedt. By Major J. H. V. CROWE, R.A. 8vo. 6s. (Presented.) (Smith, Elder, & Co.) London, 1905.

Coryat's Crudities. By THOMAS CORYAT. 2 Vols 8vo. 25s. (James MacLehose & Sons.) Glasgow, 1905.

Im Hauptquartier der Russischen Armee in Polen, 1863-1865. By Lieut.-General J. VON VERDY DU VERNOIS. 8vo. 3s. 9d. (Ernst Siegfried Mittler und Sohn.) Berlin, 1905.

Die Mobilmachung von 1870-71. By GUSTAF LEHMANN. 8vo. 5s. 6d. (Ernst Siegfried Mittler und Sohn.) Berlin, 1905.

Les Origines de la Cavalerie Française. By Capitaine H. CHOPPIN. 8vo. 3s. 9d. (Librairie Militaire, Berger-Levrault et Cie.) Paris, 1905.

Le Haut Commandement Français au Début de Chacune des Guerres de 1859 et de 1870. By Général H. BONNAL. 8vo. 3s. 9d. Paris, 1905.

The Russian Navy and the Russo-Japanese War. By Captain N. KLADO. Translated from the French by L. J. H. DICKINSON. 8vo. 5s. (Hurst & Blackett, Ltd.). London, 1905.

From Tokio through Manchuria with the Japanese. By L. L. SEAMAN. 8vo. 6s. (Sidney Appleton.) London, 1905.

Handbook for the Depression Range-Finder. (Land Service.) 8vo. (Presented.) (Harrison & Sons.) Official. London, 1905.

PRINCIPAL ADDITIONS TO LIBRARY HELD OVER FROM FEBRUARY AND MARCH, 1905.

No. 83. The British in the Iberian Peninsula, 1808-1814; as Illustrating Sea-Power and Strategy. By T. MILLER MAGUIRE. Aldershot Military Society. London, 1905.

Army Transport. By Brevet Lieut.-Colonel S. S. LONG, A.S.C. London, 1905.

Critical Sketches of Some of the Federal and Confederate Commanders. By T. F. DWIGHT. 8vo. 12s. 6d. (Houghton, Mifflin & Co.) Boston and New York, 1895.

The British Army, 1783-1802. By Hon. J. W. FORTESCUE. 8vo. 4s. 6d. (Macmillan & Co., Ltd.) London, 1905.

Lhasa and Its Mysteries. By L. A. WADDELL. 8vo. 25s. (John Murray.) London, 1905.

Military Studies. By F. L. HINDEKOPER. 8vo. (Presented.) (Hudson-Kimberley Publishing Co.) Kansas City, 1904.

A Hundred Years Ago. Battles by Land and Sea: Ulm, Trafalgar, Austerlitz. By Colonel G. A. FURSE, C.B. 8vo. (Presented.) (William Clowes & Sons, Ltd.) London, 1905.

The Despatches of Field-Marshal the Duke of Wellington, During His Campaigns in India, Denmark, Portugal, Spain, the Low Countries, and France, and Relating to America, from 1799-1815. Selected and arranged by WALTER WOOD. 8vo. 12s. 6d. (Grant Richards.) London, 1902.

Campagne de Prusse, 1806, d'après les Archives de la Guerre. By P. FOUCART. 2 Vols. 8vo. 18s. 6d. (Librairie Militaire Berger-Levrault et Cie.) Paris, 1890.

The Yellow War. By "O." 8vo. 6s. (William Blackwood & Sons.) London, 1905.

Ivan the Terrible. By K. WALISZEWSKI. Translated from the French by Lady MARY LOYD. 8vo. 14s. (William Heinemann.) London, 1904.

The Service of Security and Information. By Colonel A. L. WAGNER, U.S. Army. 8vo. 12th Edition. 7s. 6d. (Hudson-Kimberley Publishing Co.) Kansas City, 1904.

Vierteljahrshefte für Truppenführung und Heereskunde. Herausgegeben vom Grossen Generalstabe. 8vo. 2 Vols. (1 Vol. maps.) (Ernst Siegfried Mittler & Sohn.) Berlin, 1904.

History of the Russo-Japanese War. Vol. I. 8vo. (Cassell & Co., Ltd.) London, 1904.

The Thistle—The Monthly Journal of the Royal Scots, 1904-05. 4to. (Presented.) Edinburgh, 1905.

A Military and Naval Dictionary. By Major J. WISSER, U.S.A., and H. C. GAUSS. Crown 8vo. 6d. (Presented.) (L. R. Hamersley & Co.) New York, 1905.

The Organisation of Agriculture. By E. A. PRATT. 8vo. (Presented.) (John Murray.) London, 1904.

American Railways. By E. A. PRATT. 8vo. (Presented.) (Macmillan & Co., Ltd.) New York, 1903.

On the Road to Khiva. By DAVID KER. 8vo. (Presented.) (Henry S. King & Co.) London, 1874.

Battles of English History. By H. B. GEORGE. 8vo. (Presented.) (Methuen & Co.) London, 1895.

The Prevention of Disease in Tropical and Sub-Tropical Campaigns. By A. DUNCAN. 8vo. (Presented.) (J. & A. Churchill.) London, 1888.

The Sanitary Contrasts of the British and French Armies during the Crimean War. By Surgeon-General T. LONGMORE. 8vo. (Presented.) (Charles Griffin & Co.) London, 1883.

Duties of the Department of the Adjutant-General to the Forces, with Appendix; wherein is traced the Origin of each Head of Business. Official. 8vo. (Presented.) (George E. Eyre & William Spottiswoode.) London, 1867.

Notes on Military Law for the Use of the Cadets of the Royal Military College of Canada. By Captain D. JONES, R.A. 8vo. (Presented.) (Maclean, Roger & Co.) Ottawa, 1880.

The Burden of Armaments. Cobden Club. 8vo. 3s. 6d. (T. Fisher Unwin.) London, 1905.

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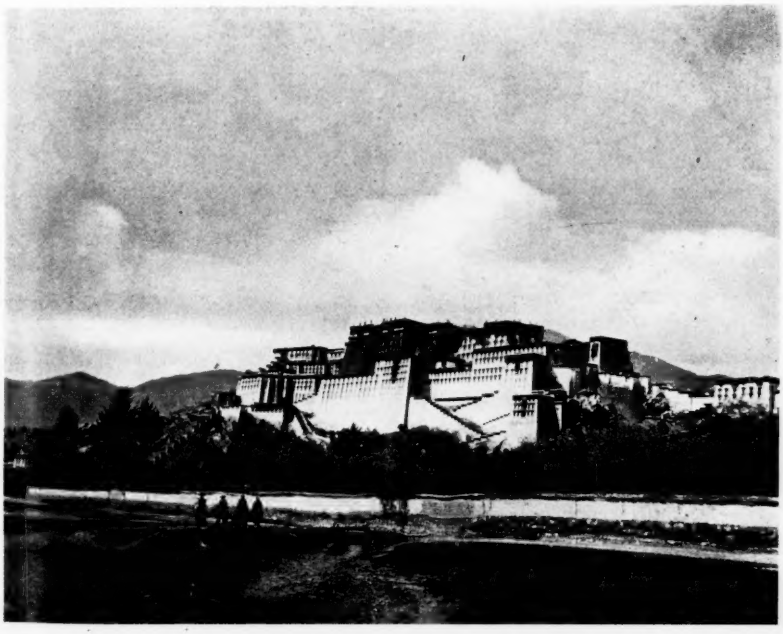

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